Raphael T. Haftka

Resumé

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PERSONAL: Born February 22, l944, Tel-Aviv, Israel; U.S. Citizen; married.

EDUCATION:

Ph.D. 1971, Department of Aerospace and Mechanical Engineering Sciences, University of California at San Diego.

B.Sc. 1965, M.Sc. 1968, Aeronautical Engineering, Technion-Israel Institute of Technology.

AREAS OF INTEREST:

Optimization methodology applied in structural design including sensitivity calculation and approximation techniques. The application of design-of-experiment techniques to engineering design optimization. Multidisciplinary optimization of aerospace vehicles. Genetic algorithms with special interest to the design of composite panels. Miniature unmanned aerial vehicles.

PROFESSIONAL RECORD:

Distinguished Professor, Department of Aerospace Engineering, Mechanics and Engineering Science, University of Florida, 1999-, Professor 1995-1999.

Christopher Kraft Professor of Aerospace and Ocean Engineering, Virginia Polytechnic Institute and State University, 1988-1994, Professor, 1981-1988.

Associate Professor at Illinois Institute of Technology - Department of Mechanical Engineering, 1978-1981, Assistant Professor 1975-1978.

Senior Lecturer at Technion-Israel Institute of Technology, 1973-1975.

National Academy of Sciences, Post Doctoral Research Associate at NASA Langley Research Center, 1971-1973.

Staff Scientist at Structures Research Associates (Laguna Beach, California) October 1970-1971.

Aerodynamicist at the Israeli Aircraft Industries, 1965-1968

PROFESSIONAL SOCIETIES:

President, International Society for Structural and Multidisciplinary Optimization (ISSMO) 1995-1999; Fellow, AIAA;

HONORS:

Christopher Kraft Professorship, 1988.

Virginia Tech Alumni Award for Excellence in Research, 1992.

AIAA Fellow, 1997.

AIAA Multidisciplinary Design Optimization Award, 1998.

Distinguished Professor, 1999.

University of Florida Research Professorship, 2001-2003.

RESEARCH

My research area is structural and multidisciplinary optimization. In the area of structural optimization, my students and I investigate diverse applications ranging from the development of algorithms to the experimental validation of reliability based optimization. The focus of many of these investigations is the design of structures made from composite materials. The combinatorial nature of the stacking sequence design for composite laminates is particularly challenging, and has motivated my work in the development of genetic algorithms for this application.

The analysis of aerospace vehicles and other complex systems often requires discrete models with many thousands or millions of degrees of freedom. A single analysis of such systems may represent large computational cost and optimization may require many thousands of such analyses. One focus of my group's research is on using approximation methods and optimization methods specifically tailored to the application to ease the computational burden. One major application of these ideas has been to the design optimization of composite laminates. Here we developed a wide variety of approximation techniques and tailored genetic algorithms, particle swarm optimization, as well as conventional gradient-based optimization to a variety of problems.

A second focus of our research is on the use of statistical models and statistical models for design optimization. This includes reliability based design, where systems are designed to have low probabilities of failure. It includes the use of statistical models for creating robust approximations, such as response surface techniques, which are used to alleviate the computational burden of optimization. It includes the use of statistical optimization methods that estimate the probability that a candidate design will be optimal as a basis for making the decision whether to analyze it or not. Finally, it includes the statistical characterization of errors in optimization algorithms due to poor functioning of these algorithms.

In the area of multidisciplinary optimization I have focused on combined aerodynamic and structural optimization of aircraft wings. Applications have included the next generation supersonic transport; the design of a truss braced transport, and blended wing body transport. In these activities I have been part of research teams in the multidisciplinary analysis and design (MAD) center at Virginia Tech. Another multidisciplinary program involves the design of multi-functional thermal protection systems for launch vehicles which carry part of the loads.

I like to work with colleagues, and I attempt to share all of my graduate students with other faculty members or NASA researchers. This arrangement benefits the students, and it helps me create interactions with and learn from my colleagues. This interaction results also in joint papers and joint research proposals. Over my 13 years at Virginia Tech, I have written papers with 8 faculty colleagues in my department and 8 in other departments. At the University of Florida I have published papers with 6 faculty members. Since 1991 I have also published papers with 10 NASA researchers and colleagues from other many other countries including, Belgium, Denmark, France, Germany, Israel, Italy, Japan, Netherlands, Poland, South Africa and Turkey.

TEACHING

My major interest in teaching is introducing optimization techniques into the undergraduate curriculum and bringing them to bear on undergraduate design activities. For this purpose I have introduced into the curriculum 3 undergraduate optimization courses - a general optimization course, a course on experimental optimal engineering design and a composite structures and material optimization courses. Additionally, I have initiated and collaborated with colleagues on the introduction of mini-design projects into structures and vibration-and-control courses.

Curriculum Development at the University of Florida

- **EGM 6365 Structural Optimization:** Developed and introduced this course at Virginia Tech and then at the university of Florida. Course seeks to introduce students to modern methods for structural design mostly in the fields of aerospace and civil engineering. Taught first in 1996 as special topics course, and in Fall 1998 as a regular course. See also course web page at http://mae.ufl.edu/haftka/stropt/.
- **EGM 4473 Experimental Optimum Engineering Design:** Developed and introduced this course in 1996 as a special topics course and then as a regular course in 1997. The course seeks to demonstrate to students how both analytical and experimental techniques are used in the design process. The course is centered around a project. This innovative course has drawn praise from graduate students in industry who took it as a special topic course. One of the students in the 1997 course, Terry Siorek, a specialist in hematology instrumentation, collaborated on a paper describing the project in this year Multidisciplinary Analysis and Optimization conference. The 1996 project, developed with Dr. Jenkins of AeMES, was described in a paper published in *Structural Optimization* in February 1998. A set of notes was developed for the course and made available to students on the course web page (http:/www.mae.ufl.edu/haftka/eoed).
- **EAS 4240 Aerospace Structural Composites:** Introduced an optimization segment into the course as a guest instructor in a two-week segment in order to broaden the design experience of the students. This will be further expanded in Spring 1999, when I will teach the course out of a newly developed textbook (see below).
- **EAS 4200C and EAS 4210C Aerospace Structures 1,2:** Introduced mini-design projects for these two courses, using the remarkable capabilities for optimization now available in commonly available spreadsheet programs (Microsoft Excel, Lotus 1-2-3, Quatro Pro). See course web pages (http:/www.mae.ufl.edu/haftka/structures and /haftka/structII)

PROFESSIONAL ACTIVITIES

I believe that many researchers and industrial practitioners do not have the time to read the large numbers of papers that are published in their field. I have invested much effort in keeping abreast of the latest development in the areas of structural and multidisciplinary optimization and I attempt to use this to provide a service to the engineering community in these fields. I have written a textbook (with Gürdal) which has an extensive list of references, and which we update regularly. I have written several survey papers, and I review about 30-40 papers per year, mostly for the AIAA journals. In reviewing papers I always attempt to call the authors attention to related work that they might have overlooked. I also organized and chaired many sessions in scientific meetings (mostly AIAA).

I was the president of the International Society of Structural and Multidisciplinary Optimization (1995-1999). This young society (founded by George Rozvany in 1991) has about 400 members, and is concerned with promoting international research and education in Structural and Multidisciplinary optimization. I continue as a member of the executive committee of ISSMO.

BOOKS AND PROCEEDINGS

1. D. T. Krasteva, C. Baker, L. T. Watson, B. Grossman, W. H. Mason, and R.T. Haftka, “Distributed control parallelism for multidisciplinary design of a high speed civil transport”, in *Parallel Numerical Computations*

with Applications, T. Yang (ed.), Kluwer Internat. Series in Engrg. and Computer Sci., Vol. 515, Norwell, MA, 1999, 119-140.

2. Gürdal. Z., Haftka, R.T. and Hajela, P., "Design and Optimization of Laminated Composite Materials", John Wiley, 1999.

3. Barthelemy, J.F. M., and Haftka, R.T., Function Approximation, Chapter 4, (pp. 51-70) and Adelman, H.M., and Haftka, R.T., "Sensitivity Analysis of Discrete Systems", Chapter 12, (pp. 291-316) in Structural Optimization: Status and Promises. Edited by M.P. Kamat, American Institute of Aeronautics and Astronautics, Washington, DC, 1993.

4. Unger, E.R., Haftka, R.T., Grossman, B., and Mason, W. H., "Integrated Aerodynamic-Structural Design of Aircraft Wings", in Control and Dynamics Systems, Advances in Theory and Applications, Vol. 57: Multidisciplinary Engineering Systems: Design and Optimization Techniques and their Application. Edited by C. T. Leondes pp 55-107. Academic Press, 1993.

5. Haftka, R. T, and Gürdal, Z., "Element of Structural Optimization," 3rd Edition, Kluwer Publishers 1992.

6. Haftka, R. T., Gürdal, Z., and Kamat, M. P., "Elements of Structural Optimization," 2nd Edition, Kluwer Publishers, 1990.

7. Adelman, H. M. and Haftka, R. T., (Editors), "Sensitivity Analysis in Engineering," Proceedings of Symposium held at Hampton, Virginia, September 1986, NASA CP-2457,1987.

8. Haftka, R. T. and Kamat, M. P., "Elements of Structural Optimization," Martinus Nijhoff, The Hague, 1985.

9. Haftka, R. T., "Finite Element and Optimization," Chapter 4 of Foundation of Structural Optimization: A Unified Approach (A. J. Morris, Editor), John Wiley, 1982.

REFEREED JOURNALS

1. Gogu, C., Bapanapalli, S.K., Haftka, R.T. and Sankar, B.V., (2009) "Comparison of Materials for an Integrated Thermal Protection System for Spacecraft Reentry", *Journal of Spacecraft and Rockets*, Vol. 46(3), 501-513.

2. Goel, T., Haftka, R.T. and Shyy, W, (2009) "Comparing error estimation measures for polynomial and kriging approximation of noise-free functions", *Structural and Multidisciplinary Optimization*, Vol. 38(5), 429-442.

3. Kumar, S., Pippy, R.J, Acar, E., Kim, N.H., and Haftka, R.T., (2009) "Approximate probabilistic optimization using exact-capacity-approximate-response distribution (ECARD)", *Structural and Multidisciplinary Optimization*, Vol. 38(6) 613-626.

4. Lin, Y.C., Haftka, R.T., Queipo, N.V. and Fregly, B.J., (2009) "Two-Dimensional Surrogate Contact Modeling for Computationally Efficient Dynamic Simulation of Total Knee Replacements", *Journal of Biomechanical Engineering*, Vol. 131.

5. Koh, B., Reinbolt, J.A., George, A.D., Haftka, R.T. and Fregly, B.J., (2009) "Limitations of parallel global optimization for large-scale human movement problems" *Journal of Biomechanical Engineering*, Vol. 31(5), 515-521.

6. Gogu, C., Matsumura, T., Haftka, R.T. and Rao, A.V., (2009) "Aeroassisted Orbital Transfer Trajectory Optimization Considering Thermal Protection System Mass", *Journal of guidance, control and dynamics*, Vol. 32(3), 927-938.

7. Kurdi, H., Schmitz, T. and Haftka, R.T., (2009) "Milling optimization of removal rate and accuracy with uncertainty: Part 1: parameter selection", *International Journal of Materials and Product Technology*, Vol. 35(1-2), 3-25.

8. Kurdi, H., Schmitz, T. and Haftka, R.T., (2009) "Milling optimization of removal rate and accuracy with uncertainty: Part 2: parameter selection", *International Journal of Materials and Product Technology*, Vol. 35(1-2), 26-46.

9. Herencia, J.E., Haftka, R.T., Weaver, P.M., and Friswell, M.I., (2008) "Lay-Up Optimization of Composite Stiffened Panels Using Linear Approximations in Lamination Space" (TN), *AIAA Journal*, 46(9), 2387-2391.

10. An, A., Acar, A., Haftka, R.T., Kim, N.H., Ifju, P.G, and Johnson, T.F., (2008) "Being Conservative with a Limited Number of Test Results," *Journal of Aircraft*, 45(6), 1969-1975.

11. Gogu, C., Haftka, R.T., Le Riche, R., Molimard, J., Vautrin, A., and Sankar, B.V., (2008) "Comparison between the basic least squares and the Bayesian approach for elastic constants identification", *Journal of Physics: Conference Series*, Vol. 135, No. 012045.

12. Kurdi, M.H., Haftka, R.T., Schmitz, T.L., and Mann, B.P., "A Robust Semi-Analytical Method for Calculating the Response Sensitivity of a Time Delay System," *Journal of Vibration and Acoustics*, 130 (6): 6 pages.

13. Lin, Y.-C., Haftka, R.T., Queipo, N.V., and Fregly, B.J., "Two-dimensional surrogate contact modeling for computationally efficient dynamic simulation of total knee replacements," *Journal of Biomechanical Engineering*, (In press).

14. Goel, T., Haftka, R.T., Shyy, W., and Watson, L.T., (2008), "Pitfalls of using a single criterion for selecting experimental designs," *International Journal for Numerical Methods in Engineering*, 75: 127 – 155.

15. Goel, T., Dorney, D.J., Haftka, R.T., and Shyy, W., (2008), "Improving the Hydrodynamic Performance of Diffuser Vanes via Shape Optimization," *Computers and Fluids*, **37** (6): 705-723.

16. Samad, A, Wei, Shyy., Kim, K.-Y., Goel, T., and Haftka, R.T., (2008), "Multiple Surrogate Modeling for Axial Compressor Blade Shape Optimization," *Journal of Propulsion and Power*, **24** (2): 302-310.

17. Kale, A., and Haftka, R.T., (2008) "Tradeoff of Weight and Inspection Cost in Reliability-Based Structural Optimization," *Journal of Aircraft*, **45** (1): 77-85.

18. Kale, A., Haftka, R.T., and Sankar, B.V., (2008) "Efficient Reliability Based Design and Inspection of Stiffened Panels against Fatigue", *Journal of Aircraft*, **45** (1): 86-97.

19. Samad, A., Shin, D.-Y., Kim, K.-Y. Goel, T., and Haftka, R.T., (2007), "Surrogate Modeling for Optimization of Dimpled Channel to Enhance Heat Transfer Perormance," *Journal of Thermophysics and Heat Transfer*, **21** (3): 667-670.

20. Martinez, O.A, Sankar, B.V., Haftka, R.T., Bapanapalli, S.K., Max L. Blosser, M.L., (2007), "Micromechanical Analysis of Composite Corrugated-Core Sandwich Panels for Integral Thermal Protection Systems," *AIAA Journal*, **45**(9): 2323-2336.

21. Schutte, J.F., Haftka, R.T., and Fregly, B.J. (2007) "Improved global convergence probability using multiple independent optimizations," *International Journal of Numerical Methods in Engineering,* **71**(6): 678-702, August.

22. Acar, E., Kale, A., and Haftka, R.T. (2007) "Comparing Effectiveness of Measures That Improve Aircraft Structural Safety," *Journal of Aerospace Engineering*, **20**(3): 186-199.

23. Acar, E., and Haftka, R.T., (2007) "Reliability-Based Aircraft Structural Design Pays, Even with Limited Statistical Data," *J. Aircraft*, **44** (3): 812-823.

24. Missoum, S., Ramu, P., and Haftka, R.T., (2007), "A Convex Hull Approach for the Reliability-Based Design Optimization of Nonlinear Transient Dynamic Problems," *Comput. Methods Appl. Mech. Engrg.,* **196**: 2895-2906.

25. Goel, T., Haftka, R.T., Shyy, W., Queipo, N.V., (2007), "Ensemble of Multiple Surrogates", *Structural and Multidisciplinary Optimization,* **33** (3): 199-216.

26. Goel, T., Vaidyanathan, R., Haftka, R.T., Shyy, W., Queipo, N.V., and Tucker K., (2007) "Response Surface Approximation of Pareto Optimal Front in Multi-objective Optimization," *Computer Methods in Applied Mathematics and Engineering*, **196** (4-6): 879-893.

27. Mack, Y., Goel, T.,Shyy, W., Haftka, R.T., "Surrogate Model-based Optimization Framework: A Case Study in Aerospace Design", to appear in Evolutionary Computation in Dynamic and Uncertain Environments, Editors S. Yang, Y.S. Ong, and Y. Jin, Springer Kluwer Academic Press.

28. Acar, E., Haftka, R.T., and Johnson, T.F., (2007) "Tradeoff of Uncertainty Reduction Mechanisms for Reducing Weight of Composite Laminates," *ASME Journal of Mechanical Design*, **129** (3): 266-274.

29. Reinbolt, J.A., Haftka, R.T., Chmielewski, T.L., and Fregly, B.J., (2007) "Are Patient-Specific Joint and Inertial Parameters Needed for Accurate Inverse Dynamics Analyses of Gait?" *IEEE Transaction on Biomedical Engineering*, **54** (5), 782-793.

30. Papila, M., Haftka, R.T., Nishida, T, and Sheplak, M., (2006) "Piezoelectric Microphone Design Pareto Optimization: Tradeoff Between Sensitivity and Noise Floor," *Journal of Micromechanical Systems*, **15(6),** 1632-1643.

31. Haftka, R.T., Rosca, R.I., and Nikolaidis, E., (2006), "An Approach for Testing Methods for Modeling Uncertainty," *Journal of Mechanical Design,* **128** (5): 1038-1049.

32. Groenwold, A.A., and Haftka, R.T., (2006) "Optimization with Non-homogeneous Failure Criteria like Tsai-Wu for Composite Laminates," *Structural and Multidisciplinary Optimization*, **32** (3): 183-190.

33. Hosder, S. Grossman, B., Haftka, R. T., Mason, W. H., and Watson, L. T. (2006), "Quantitative Relative Comparison of CFD Simulation Uncertainties for a Transonic Diffuser," *Computers and Fluids*, **35** (10): 1444-1458, December.

34. Ramu, P., Qu, X., Youn, B.D, and Choi, K.K., (2006), "Inverse reliability measures and reliability-based design optimization," *Int. J. Reliability and Safety,* **1** (1/2): 187-205.

35. Koh, B.-I., George, A.D., Haftka, R.T., and Fregly, B.J., (2006), "Parallel Asynchronous Particle Swarm Optimization," *International Journal for Numerical Methods in Engineering*, **67** (4): 578-595, July.

36. Goel, T., Haftka, R. T., Papila, M., Shyy, W., (2006) "Generalized Bias Error Bounds for Response Surface Approximation," *International Journal of Numerical Methods in Engineering*, **65** (12): 2035-2059, March.

37. Haftka, R.T., and Watson, L.T., (2006) "Decomposition Theory for Multidisciplinary Design Optimization Problems with Mixed Integer Quasiseparable Subsystems," *Optimization and Engineering*, **7**: 135–149.

38. Acar, E., Haftka, R.T., Sankar, B.V. and Qui, X., (2006) "Increasing Allowable Flight Loads by Improved Structural Modeling," *AIAA Journal*, **44** (2): 376-381.

39. Acar, E., Kale, A., Haftka, R.T., and Stroud, W.J., (2006) "Structural Safety Measures for Airplanes," *Journal of Aircraft*, **43** (1): 30-38.

40. Grosset, L., Le Riche, R., and Haftka, R.T., (2006) "A double-distribution statistical algorithm for composite laminate optimization," *Structural and Multidisciplinary Optimization*, **31** (1): 49-59.

41. Huang, J., Rapoff, A.J., and Haftka, R.T., (2006) "Attracting cracks for arrestment in bone-like composites," *Materials & Design*, **29** (6): 461-469.

42. Huang, J., and Haftka, R.T., (2005) "Optimization of fiber orientations near a hole for increased load carrying capacity of composite laminates," *Structural and Multidisciplinary Optimization*, **30** (5): 335-341.

43. Schutte, J.F., Koh, B.I., Reinbolt, J.A., Fregly, B.J., Haftka R.T. and George, A.D., (2005) "Evaluation of a Particle Swarm Algorithm For Biomechanical Optimization," *J. Biomech.*, **127**: 465-474.

44. Van Keulen, F., Haftka, R.T, and Kim, N.H**.,** (2005) **"**Review of options for structural design sensitivity analysis. Part 1: Linear systems," *Computer Methods in Applied Mechanics and Engineering,* **194** (30-33): 3213-3243, August.

45. Reinbolt, J. A., Schutte, J. F., Fregly, B. J., Koh, B. I., Haftka, R. T., George, A. D., and Mitchell, K. H., (2005) "Determination of patient-specific multi-joint kinematic models through two-level optimization," *Journal of Biomechanics*, **38**: 621-626.

46. Queipo, N.V., Haftka, R.T., Shyy, W., Goel, T., Vaidyanathan, R., Tucker, P.K., (2005) "Surrogate-based analysis and optimization," *Progress in Aerospace Sciences,* **41**: 1-28.

47. Haftka, R.T., and Watson, L.T., (2005) "Multidisciplinary Design Optimization with Quasiseparable Subsystems," *Optimization and Engineering*, **6**: 9–20, March.

48. Papila, M., Haftka, R. T. and Watson, L. T., (2005) "Pointwise Bias Error Bounds for Response Surface Approximations and Min-Max Bias Design," *AIAA Journal,* **43** (8): 1797-1807, August.

49. Venkataraman, S., Haftka, R. T., Sankar, B. V., Zhu; H., Blosser, M. L., (2004) "Optimal Functionally Graded Metallic Foam Thermal Insulation," *AIAA Journal*, **42** (11): 2355-2363.

50. Schutte, J.F., Reinbolt, J.A., Fregly, B.J., Haftka, R.T., and George, A.D., (2004) "Parallel global optimization with the particle swarm algorithm," *Int J Numerical Methods in Engineering*, **61**(13): 2296-2315, December.

51. Zhu, H., Sankar, B.V., Haftka, R.T., Venkataraman, S., and Blosser, M., (2004) "Optimization of functionally graded metallic foam insulation under transient heat transfer conditions," *Structural and Multidisciplinary Optimization*, **28** (5): 349-355, November.

52. Soundappan P, Nikolaidis E, Haftka R.T, Grandhi, R., and Canfield, R., (2004) "Comparison of evidence theory and Bayesian theory for uncertainty modeling," *Reliability Engineering & System Safety*, *85* (1-3): 295-311, Jul-Sep.

53. Qu, X., Venter, G., and Haftka, R.T., (2004) "New formulation of minimum-bias central composite experimental design and Gauss Quadrature," *Structural and Multidisciplinary Optimization*, **28(4)**: 231-242.

54. Venkataraman, S., and Haftka, R.T., (2004) "Structural optimization complexity: what has Moore's law done for us?" *Structural and Multidisciplinary Optimization*, **28 (6),** pp. 375-387.

55. Zhu, H., Sankar, B.V., Haftka, R.T., Venkataraman, S., and Blosser, M., (2004) "Minimum Mass Design of Insulation Made of Functionally Graded Material," *J. Spacecraft and Rockets*, (EN), pp. 467-469.

56. Grosset, L., Le Riche, R. and Haftka, R.T., (2004) "A study of the effects of dimensionality on stochastic hill climbers and estimation of distribution algorithms," Lecture Notes in Computer Science, Vol. 2936, selected

and revised papers from the 6th International Conference on Artificial Evolution (EA03), Springer Verlag, May, pp. 27-38.

57. Liu, B., Haftka, R.T., and Watson L.T., (2004) "Global-Local Structural Optimization Using Response Surfaces of Local Optimization Margins," *Structural and Multidisciplinary Optimization*, **27** (5), 352-359.

58. Qu, X., and Haftka, R.T., (2004) "Reliability-Based Design Optimization Using Probability Sufficiency Factor," *Structural and Multidisciplinary Optimization*, **27** (5):314-325.

59. Nikolaidis, E. Chen S., Cudney, H., Haftka, R.T., and Rosca, R., (2004) "Comparison of Probability and Possibility for Design against Catastrophic Failure under Uncertainty," *ASME Journal of Mechanical Design*, **126**: 386-394, May.

60. Lian, Y., Shyy, W., and Haftka, R.T., (2004) "Shape Optimization of a Membrane Wing for Micro Air Vehicles (TN)," *AIAA Journal*, **42** (2): 424-426.

61. Liu, B., and R.T. Haftka (2004) "Single-level composite wing optimization based on flexural lamination parameters," *Structural and Multidisciplinary Optimization*, **26**: 111-120.

62. Liu, B., and R.T. Haftka, (2004) "Maximization of Composite Wing Weight Using Flexural Lamination Parameters," *Structural and Multidisciplinary Optimization*, **26**: 111-120, Springer Verlag.

63. Papila, M., and Haftka, R.T., (2003) "Implementation of a Crack Propagation Constraint within Structural Optimization Software," *Structural and Multidisciplinary Optimization*, **25** (5-6): 327-338.

64. Huang, J., Venkataraman, S., Rapoff, A.J., and Haftka, R.T., (2003) "Optimization of Axisymmetric Elastic Modulus Distributions around a Hole for Increased Strength," *Structural Optimization*, **25** (4): 1-12.

65. Ragon, S. A., Gürdal, Z., Haftka, R. T., Tzong, T. J., (2003) "Bilevel Design of a Wing Structure using Response Surfaces," *Journal of Aircraft*, **40** (5): 985-992, September/October.

66. Qu, X., Haftka, R.T., Venkataraman, S., and Johnson, T.F., (2003) "Deterministic and Reliability-Based Optimization of Composite Laminates for Cryogenic Environments," *AIAA Journal*, **41** (10): 2029-2036.

67. Lamberti, L., Venkataraman, S., Haftka, R.T., and Johnson, T.F., (2003) "Preliminary Design Optimization of Stiffened Panels Using Approximate Analysis Models," *International Journal for Numerical Methods in Engineering*, **57** (10): 1351-1380.

68. Venkataraman, S., Lamberti, L., Haftka, R.T., and Johnson, T.F., (2003) "Challenges in Comparing Numerical Solutions for Optimum Weights of Stiffened Shells", *Journal of Spacecraft and Rockets*, **40** (2): 183-192.

69. Venkataraman, S., Haftka, R.T., and Rapoff, A.J., (2003) "Structural Optimization using Biological Variables to Help Understand How Bones Design Holes," *Structural Optimization*, **25** (1): 19-34.

70. Kim, H., Haftka, R.T., Mason, W.H., Watson, L.T., and Grossman, B., (2002) "Probabilistic Modeling of Errors from Structural Optimization Based on Multiple Starting Points," *Optimization and Engineering*, Vol. 3: 415-430.

71. Vitali, R., Haftka, R.T., and Sankar, B.V., (2002) "Multi-fidelity design of stiffened composite panel with a crack," *Structural Optimization*, **23**(5): 347-356, June.

72. C.A. Baker, B. Grossman, R.T. Haftka, W.H. Mason and L.T. Watson, (2002) "High-Speed Civil Transport Design Space Exploration Using Aerodynamic Response Surface Approximations," *Journal of Aircraft*, **39** (2): 215-220, March-April.

73. Vitali, R., Park, O., Haftka, R.T., Sankar, B.V., and Rose, C.A., (2002) "Structural Optimization of a Hat-Stiffened Panel Using Response Surfaces," *Journal of Aircraft*, **39** (1): 158-166.

74. Baker, C.A., Watson, L. T., Grossman, B., Mason, W. H. and Haftka, R. T., (2001) "Parallel global aircraft configuration design space exploration", *Internat. J. Compuer. Research*, **10** (4): 501-515.

75. Cox, S.E., Haftka, R.T., Baker, C.A., Grossman, B., Mason, W.H., and Watson, L.T., (2001) "A Comparison of Global Optimization Methods for the Design of a High-speed Civil Transport," *J. of Global Optimization*, **21:** 415-433.

76. Gern, F.H., Ko, A., Sulaeman, E., Gundlach, J.F., Kapania, R.K., and Haftka, R.T., (2001) "Multidisciplinary Design Optimization of a Transonic Commercial Transport with Strut-Braced Wing," *J. Aircraft*, **38** (6): 1006-1014**,** November-December.

77. Hosder, S., Watson, L.T., Grossman, B., Mason, W.H., and Kim, H., (2001) "Polynomial Response Surface Approximations for Multidisciplinary Design Optimization of a High Speed Civil Transport," *Optimization and Engineering*, **2:** 431-452.

78. Kim, H, Papila, M., Mason, W. H., Haftka, R. T., Watson, L. T., and Grossman, B., (2001) "Detection and Repair of Poorly Converged Optimization Runs," *AIAA J.*, **39**(12): 2242-2249, December.

79. Nikolaidis, E., and Haftka, R.T., (2001) "Theories of Uncertainty for Risk Assessment when Data is Scarce," *International Journal for Advanced Manufacturing Systems*, **4**(1): 49-56.

80. Akgün, M.A., Haftka, R.T, Wu, K.C., Walsh, J.L and Garcelon, J.H., (2001) "Efficient Structural Optimization for Multiple Load Cases Using Adjoint Sensitivities," *AIAA Journal*, **39**(3), 511-516.

81. Park, O., Haftka, R.T., Sankar, B.V., Starnes, J.H., and Nagendra, S., (2001) "Analytical-Experimental Correlation for a Stiffened Composite Panel Loaded in Axial Compression," *Journal of Aircraft*, **38** (2)**,** 379-387.

82. Akgün, M.A., Garcelon, J.H., and Haftka, R.T., (2001) "Fast Exact Linear and Non-linear Structural Reanalysis and the Sherman-Morrison-Woodbury Formulas," *International Journal for Numerical Journal in Engineering*, **50** (7)**:** 1587-1606.

83. Venkataraman, S., Haftka, R.T., and Johnson, T.F., (2001) "Maximal Errors due to Use of Equivalent Properties for Sublaminates," *AIAA Journal*, **39** (2).

84. Goel, A., Baker, C. A. Shaffer, C.A., Grossman, B., Mason, W.H., Watson, L.T., and Haftka, R.T., (2001) "VizCraft: a problem solving environment for configuration design of a high speed civil transport", *Computing in Science and Engineering*., **3**: 56-66.

85. Soremekun,G., Gürdal, Z., Haftka, R.T., and Watson, L.T., (2001) "Composite laminate design optimization by genetic algorithm with generalized elitist selection," *Computers & Structures*, **79** (2): 131-143.

86. John F. Gundlach, J.F., Tetrault, P-A., Gern, F.H., Naghshineh-Pour, A.H., Ko, A., Schetz, J.A., Mason, W.H., Kapania, R.K., Grossman, B., and Haftka, R.T., (2000) "Conceptual Design Studies of a Strut-Braced Wing Transonic Transport," *Journal of Aircraft*, **37** (6): 976-983, Nov-Dec.

87. Papila, M., and Haftka, R.T., (2000) "Response Surface Approximations: Noise, Error Repair, and Modeling Errors," *AIAA Journal*, **38**(12): 2336-2343.

88. Liu, B., Haftka, R.T., and Akgün M.A., (2000) "Two-Level Composite Wing Structural Optimization Using Response Surfaces," *Structural Optimization*, **20** (2): 87-96.

89. Madsen, J.I., Shyy, W., and Haftka, R.T., (2000) "Response Surface Techniques for Diffuser Shape Optimization," *AIAA Journal*, **38** (9): 1512-1518.

90. Garcelon, J.H., haftka, R.T., and Scotti, J.S., (2000) "Approximations in Optimization of Damage Tolerant Structures," *AIAA Journal*, **38** (3): 517-524.

91. Venter, G., and Haftka, R.T., (2000) "Two-Species Genetic Algorithm for Design under Worst Case Conditions," *Evolutionary Optimization* (internet Journal), **2** (1): 1-19.

92. Liu,B. Haftka R.T., Akgün M. and Todoroki, A., (2000) "Permutation Genetic Algorithm For Stacking Sequence Design Of Composite Laminates", *Computer Methods in Applied Mechanics and Engineering*, **186**: 357-372.

93. Kajiwara, I. and Haftka, R. T., (2000) "Integrated Design of Aerodynamics and Control System for Micro Air Vehicles," *JSME International Journal*, **43** (3): 684-690.

94. Venter G., and Haftka, R.T., (1999) "Using Response Surface Approximations in Fuzzy Set Based Design Optimization," *Structural Optimization*, **18** (4): 218-227.

95. Krasteva, D.T., Watson, L.T., Baker, C., Grossman, B., Mason, W.H. and Haftka, R.T., (1999) "Distributed Control Parallelism in Multidisciplinary Aircraft Design," *Concurrency: Practice and Experience*, **11** (8): 435-459.

96. Gangadharan, S.N., Nikloaidis, E., Lee, K., Haftka, R.T., and Burdisso, R., (1999) "Antioptimization for Comparison of Alternative Structural Models and Damage Detection," *AIAA Journal*, **37** (7): 857-864.

97. Haim, D., Giunta, A.A, Holzwarth, M.M., W. H. Mason, L. T. Watson, and R. T. Haftka, (1999) "Comparison of optimization software packages for an aircraft multidisciplinary design optimization problem," Design Optimization: International Journal for Product and Process Improvement, MCB University Press, West Yorkshire, England, **1** (1): 9-23.

98. Knill, D.L., Giunta, A.A., Baker, C.A., Grossman, B., Mason, W.H., Haftka, R.T., and Watson, L.T., (1999) "Response Surface Models Combining Linear and Euler Aerodynamics for Supersonic Transport Design," *Journal of Aircraft*, **36** (1): 75-86.

99. Balabanov, V.O., Giunta, A.A., Golovidov, O., Grossman, B., Mason, W.H., Watson, L.T., and Haftka, R.T., (1999) "Reasonable Design Space Approach to Response Surface Approximation," *Journal of Aircraft*, **36** (1): 308-315.

100. Mason, B.H., Haftka, R.T., Johnson, E.R., and Farley, G.L., (1998) "Variable Complexity Design of Composite Fuselage Frames by Response Surface Techniques," *Thin Wall Structures*, **32** (4): 235-261.

101. Venter, G., Haftka, R.T., and Starnes, J.H., Jr., (1998) "Construction of Response Surface Approximation for Design Optimization," *AIAA Journal*, **36** (12): 2242-2249.

102. McMahon, M.T., Watson, L.T., Soremekun, G.A., Gürdal, Z., and Haftka, R.T., (1998) "A Fortran 90 Genetic Algorithm Module for Composite Laminate Structure Design," *Engineering with Computers*, **14**: 260-273.

103. Lombardi, M., and Haftka, R.T., (1998) "Anti-optimization Technique for Structural Design under Load Uncertainties," *Computer Methods in Applied Mechanics and Engineering*, **157** (1-2): 19-31.

104. Roux, W.J., Stander, N., and Haftka, R.T., (1998) "Response Surface Approximations for Structural Optimization," *International Journal for Numerical Methods in Engineering*, **42**: 517-534.

105. Todoroki, A., and Haftka, R.T., (1998) "Stacking Sequence Optimizations for Composite Plate Buckling by Genetic Algorithm with Response Surface in Lamination Parameters," *Transcations of JSME*, A *64* (621): 8-15 (in Japanese).

106. Haftka, R.T., Scott, E.P., and Cruz, J.R., (1998) "Optimization and Experiments: A Survey," *Applied Mechanics Reviews*, **51** (7): 435-448.

107. Haryadi, S.G., Kapania, R.K., and Haftka R.T., (1998) "Global/local analysis of composite plates with cracks," *Composites Part B*, **29** (3): 271-276.

108. Todoroki, A., and Haftka, R.T., (1998) "Stacking sequence optimization by a genetic algorithm with a new recessive gene like repair strategy," *Composites Part B*, **29** (3): 277-285.

109. Haftka, R.T., and Jenkins, D.A., (1998) "Classrooom project in analytical and experimental optimization," *Structural Optimization*, **15** (1): 63-67, February.

110. Giunta, A.A., Balabanov, V., Haim, D., Grossman, B., Mason, W.H., Watson, L.T., and Haftka, R.T., (1997) "Aircraft Multidisciplinary Design Optimisation Using Design of Experiments Theory and Response Surface Modelling," *Aeronautical Journal*, **101** (1008): 347-356.

111. Juneja, V., Haftka, R.T., and Cudney, H.H., (1997) "Damage Detection and Damage Detectability - Analysis and Experiments," *Journal of Aerospace Engineering*, **10** (4): 135-142.

112. Sobieszczanski-Sobieski, J., and Haftka, R.T., (1997) "Multidisciplinary Aerospace Design Optimization: Survey of Recent Developments," *Structural Optimization*, **14** (1): 1-23.

113. Kapania, R.K., Haryadi, S.G., and Haftka, R.T., (1997) "Global/Local Analysis of Composite Plates with Cutouts," *J. Comp. Mech.*, **19** (5): 386-396, April.

114. Maglaras, G., Nikolaidis, E., Haftka, R.T., and Cudney, H.H., (1997) "Analytical-Experimental Comparison of Probabilistic methods and Fuzzy Set based Methods for Designing under Uncertainty," *Structural Optimization*, **13** (2/3): 69-80.

115. Woodson, M.B., Johnson, E.R., and Haftka, R.T, (1996) "Optimal Design of Composite Fuselage Frames for Crashworthiness," *International Journal of Crashworthiness*, **1** (4): 369-380.

116. Burgee, S., Giunta, A. A., Narducci, R., Watson, L. T., Grossman, B. and Haftka, R. T., (1996) "A Coarse Grained Parallel Variable-Complexity Multidisciplinary Optimization Paradigm," *The International Journal of Supercomputer Applications and High Performance Computing*, **10** (4): 269-299.

117. Maglaras, G., Ponslet, P., Haftka, R.T., Nikolaidis, E., Sensharma, P., and Cudney, H.H., (1996) "Analytical and Experimental Comparison of Probabilistic and Deterministic Optimization," *AIAA Journal*, **34** (7): 1512-1518.

118. Sensharma, P.K., and Haftka, R.T., (1996) "Limits of Stress Reduction in a Plate with a Hole using Piezoelectric Actuators," *Journal of Intelligent Material Systems and Structures*, **7** (4), pp. 363-371.

119. Kaufman, M., Balabanov, V., Burgee, S.L., Giunta, A.A., Grossman, B., Haftka, R.T., Mason, W.H., and Watson, L.T., (1996) "Variable-Complexity Response Surface Approximations for Wing Structural Weight in HSCT Design," *Computational Mechanics*, **18** (2), pp. 112-126.

120. Furuya, H., and Haftka, R.T., (1996) "Combining Genetic and Deterministic Algorithms for Locating Actuators on Space Structures," *Journal of Spacecraft and Rockets*, **33** (3), pp. 422-427.

121. Nagendra, S., Haftka, R.T., Gürdal, Z. and Watson, L.T., (1996) "Derivative based Approximation for Predicting the Effect of Changes in Laminate Stacking Sequence," *Structural Optimization*, **11** (3/4), pp. 235-243.

122. Huang, X., Dudley, J., Haftka, R.T., Grossman, B., and Mason, W.H., (1996) "Structural Weight Estimation for Multidisciplinary Optimization of a High-Speed Civil Transport," *Journal of Aircraft*, **33** (3), pp. 608-616, 1996.

123. Balabanov, V.O., and Haftka, R.T., (1996) "Topology Optimization of Transport Wing Internal Structure," (Technical Note), *Journal of Aircraft*, **33** (1), pp. 232-233.

124. Nagendra, S., Jestin, D., Gürdal, Z., Haftka, R.T., and Watson, L.T., (1996) "Improved genetic Algorithms for the Design of Stiffened Composite Panels," *Computers & Structures*, **58** (3), pp. 543-555.

125. Ponslet, E., Maglaras, G., Haftka, R.T., Nikolaidis, E., and Cudney, H.H., (1995) "Comparison of Probabilistic and Deterministic Optimization using Genetic Algorithms," *Structural Optimization*, **10** (3/4), pp. 247-257, December.

126. Furuya, H., and Haftka, R.T., (1995) "Placing Actuators on Space Structures by Genetic Algorithms and Effectiveness Indices," *Structural Optimization*, **9**: 69-75, Apr. 1995.

127. Furuya, H., and Haftka, R.T., (1995) "Static Shape Control of Space Trusses with Partial Measurements," *Journal of Spacecraft and Rockets*, **32**(5): 856-865.

128. Narducci, R., Grossman, B., and Haftka, R.T., (1995) "Design Sensitivity Algorithms for an Inverse Design Problems involving Shock Waves," *Inverse Problems in Engineering*, **2**: 49-83.

129. Le Riche, R., and Haftka, R.T., (1995) "Improved Genetic Algorithm for Minimum Thickness Composite Laminate Design," *Composite Engineering*, **5** (2): 143-161.

130. Zhou, M., and Haftka, R.T., (1995) "A Comparison of Optimality Criteria Methods for Stress and Displacement Constraints," *Computer Methods in Applied Mechanics and Engineering*, **124**, pp. 253-271.

131. Elishakoff, I., Haftka, R.T., and Fang, J., (1994) "Structural Design Under Bounded Uncertainty - Optimization with Anti-optimization," *Computers and Structures*, **53** (6), pp. 1401-1405.

132. Messer, R.S., Haftka, R.T., and Cudney, H.H., (1994) "Cost of Model Reference Adaptive Control: Analysis, Experiments, and Optimization," *Journal of Guidance, Control, and Dynamics*, **17** (5), pp. 975-982.

133. Lee, J., Haftka, R.T., Griffin, O.H., Jr., Watson, L.T., and Sensmeier, M.D., (1994) "Detecting Delamination in a Composite Beam using Anti-optimization," *Structural Optimization*, **8** (2/3), pp. 93-100, October.

134. Kogiso, N., Watson, L.T., Gürdal, Z., Haftka, R.T., and Nagendra, S., (1994) "Design of Composite Laminates by a Genetic Algorithm with Memory," *Mechanics of Composite Materials and Structures*, **1** (1), pp. 95-117, September.

135. Ponslet, E., Haftka, R.T., and Cudney, H.H., (1994) "Model Reduction and Eigenvalue Sensitivity for Controlled Structures," *Computers and Structures*, **51** (4), pp. 373-380, May.

136. Gürdal, Z., Haftka, R.T., and Nagendra, S., (1994) "Genetic Algorithms for the Design of Laminated Composite Panels," *SAMPE Journal*, **30** (3), pp. 29-35.

137. Kadivar, M.H., Sensharma, K.P., and Haftka, R.T., (1994) "Effect of Isotropy of Actuation Strains for a Plate with a Hole," *(TN) AIAA J.*, **32** (8), pp. 1743-1745.

138. Kogiso, N., Watson, L.T., Gürdal, Z., and Haftka, R.T., (1994) "Genetic Algorithms with Local Improvement for Composite Laminate Design," *Structural Optimization*, **7** (4), pp. 207-218.

139. Mróz, Z., and Haftka, R.T., (1994) "Design Sensitivity Analysis of Non-Linear Structures in Regular and Critical States," *Int. J. Solids Structures*, **31** (13), pp. 2071-2098.

140. Sensharma, P.K., Kadivar, M.H., and Haftka, R.T., (1994) "Effect of Partial Thickness Actuation on Stress Concentration Reduction near a Hole," *(TN) AIAA Journal*, **32** (4), pp. 884-886.

141. Nagendra, S., Gürdal, Z., Haftka, R.T., and Starnes, J.H., Jr., (1994) "Buckling and Failure Characteristics of Compression-Loaded Stiffened Composite Panels with a Hole," *Composite Structures*, **28**, pp. 1-17.

142. Sankaranarayanan, S., Haftka, R.T., and Kapania, R.K., (1994) "Truss Topology Optimization with Simultaneous Analysis and Design," *AIAA Journal*, **32** (2), pp. 420-424.

143. Ponslet, E., Haftka, R.T., Hallauer, W.L., and Cudney, H.H., (1994) "Desensitizing Structural-Control Design," *Journal of Guidance, Control and Dynamics*, **17** (1), pp. 175-180.

144. Hutchison, M.G., Unger, E.R., Mason, W.H., Grossman, B., and Haftka, R.T., (1994) "Variable-Complexity Aerodymnamic Optimization of a High-Speed Civil Transport Wing," *Journal of Aircraft*, **31**(1), pp. 110-116.

145. Shankar, J., Ribbens, C.J., Haftka, R.T, and Watson, L.T., (1993) "Computational study of a nonhierarchical decomposition algorithm," *Comput. Optim. Appl.,* **2**: 273-293.

146. Sensharma, P.K., Palaneträ, M.J., and Haftka, R.T., (1993) "Stress Reduction in an Isotropic Plate with a Hole by Applied Induced Strains," *Journal of Intelligent Material Systems and Structures*, **4**(4): 509-518.

147. Rakowska, J., Haftka, R.T., and Watson, L.T., (1993) "Multi-Objective Control-Structure Optimization via Homotopy Methods," *SIAM Journal of Optimization*, **3**(3): 654-667.

148. Haftka, R.T., (1993) "Semi-Analytical Static Nonlinear Sensitivity Analysis," *AIAA Journal*, **31**(7): 1307-1312.

149. Chang, K.J., Haftka, R.T., Giles, G.L., and Kao, P.-J., (1993) "Sensitivity-Based Scaling for Approximating Structural Response," *Journal of Aircraft*, **30**(2): 283-287.

150. Joh, C.-Y., Grossman, B., and Haftka, R.T., (1993) "Design Optimization of Transonic Airfoils," *Engineering Optimization*, **21** (1): 1-20.

151. Barthelemy, J.-F.M., and Haftka, R.T., (1993) "Approximation Concepts for Optimum Structural Design - a Review," *Structural Optimization*, **5** (3): 129-144.

152. Le Riche, R. and Haftka, R.T., (1993) "Optimization of Laminate Stacking Sequence for Buckling Load Maximization by Genetic Algorithm," *AIAA Journal*, **31** (5): 951-956.

153. Rais-Rohani, M., Haftka, R.T., Grossman, B., and Unger E.,R., "Integrated Aerodynamic-structural-control Wing Design," *Computing Systems in Engineering*, **3** (6), 1992 (came out in 1993).

154. Haftka, R.T., Sobieski, J., and Padula, S.L., (1992) "On Options for Interdisciplinary Analysis and Design," *Structural Optimization*, **4**: 65-74.

155. Unger, E.R., Hutchison, M.G., Rais-Rohani, M., Haftka, R.T., and Grossman, B., (1992) "Variable-Complexity Multidisciplinary Design of a Transport Wing," International Journal of System Automation: Research and Applications (SARA), **2**(2): 87-113.

156. Padula, S.L., Sandridge, C.A., Walsh, J.L., and Haftka, R.T., (1992) "Integerated Controls-Structures Optimization of a Large Space Structure," *Computers and Structures*, **42** (5): 725-732.

157. Nagendra, S., Haftka, R.T., and Gürdal, Z., (1992) "Stacking Sequence Optimization of Simply Supported Laminates with Stability and Strain Constraints," *AIAA Journal*, **30** (8): 2132-2137.

158. Holnicki-Szulc, J., and Haftka, R.T., (1992) "Vibration Mode Shape Control by Prestressing," (Technical Note), *AIAA Journal*, **30** (7): 1924-1927.

159. Haftka, R. T., and Walsh, J. L., (1992) "Stacking Sequence Optimization for Buckling of Laminated Plates by Integer Programming," *AIAA Journal*, **30** (3): 814-819.

160. Rakowska, J., Haftka, R.T., and Watson, L. T., (1991) "Tracing the Efficient Curve for Multi-Objective Control-Structure Optimization," *Computing Systems in Engineering*, **2** (5/6): 461-471.

161. Haftka, R. T., (1991) "Limits on Static Shape Control for Space Structures," *AIAA Journal*, **29** (11): 1945-1950.

162. Greene, W. H. and Haftka, R. T., (1991) "Computational Aspects of Sensitivity Calculations in Linear Transient Structural Analysis," *Structural Optimization*, **3**: 176-201.

163. Barthelemy, B., Haftka, R. T., Madapur, U., and Sankaranarayanan, S., (1991) "Integrated Analysis and Design Using 3-D Finite Elements," *AIAA Journal*, **29** (5): 791-797.

164. Nagendra, S., Haftka, R. T., Gürdal, Z., and Starnes, J. H., (1991) "Design of Blade-Stiffened Composite Plate with a Hole," *Composite Structures*, **18**: 195-219.

165. Gangadharan, S. N., Nikolaidis, E., and Haftka, R. T., (1991) "Probabilistic System Identification of Two Flexible Joint Models," *AIAA Journal*, **29** (8): 1319-1326.

166. Schamel, G. C., and Haftka, R. T., (1991) "Active Vibration Control with Model Correction on a Flexible Laboratory Grid Structure," *Journal of Guidance, Control and Dynamics*, **14** (5): 993-1000.

167. Rakowska, J., Haftka, R. T., and Watson, L. T., (1991) "An Active Set Algorithm for Tracing Parametrized Optima," *Structural Optimization*, **3**: 29-44.

168. Haftka, R. T., and Barthelemy, B., (1991) "On the Accuracy of Shape Sensitivity," *Structural Optimization*, **3**: 1-6.

169. Sandridge, C. A., and Haftka, R. T., (1991) "Modal Truncation, Ritz Vectors, and Derivatives of Closed-Loop Damping-Ratios," *Journal of Guidance, Control and Dynamics*, **14** (4): 785-790.

170. Haftka, R.T., (1991) "Combining Global and Local Approximations," (Technical Note), *AIAA Journal*, **29** (9): 1523-1525.

171. Grossman, B., Haftka, R. T., Kao, P.-J, Polen, D., Rais-Rohanni, M., and Sobieszczanski-Sobieski, J., (1990) "Integrated Aerodynamic-Structural Design of a Transport Wing," *Journal of Aircraft*, **27** (12): 1050-1056, 1990.

172. Czajkowski, E. A., Preumont, A., and Haftka, R. T., (1990) "Spillover Stabilization of Large Space Structures," *Journal of Guidance, Control and Dynamics*, **13** (6): 1000-1007.

173. Yang, J. S., Nikolaidis, E., and Haftka, R. T., (1990) "Design of Aircraft Wings Subjected to Gust Loads: A System Reliability Approach," *Computers and Structures*, **36** (6): 1057-1066.

174. Greene, W. H., and Haftka, R. T., (1990) "Reducing Distortion and Internal Forces in Truss Structures by Member Exchanges," *AIAA Journal*, **28** (9): 1655-1662.

175. Gangadharan, S.N., Haftka, R.T., and Nikolaidis, E., (1990) "An Easily Implemented Static Condensation Method for Structural Sensitivity Analysis," *Communications in Applied Numerical Methods*, **6**: 161-171.

176. Haftka, R.T., (1990) "Stiffness-Matrix Condition Number and Shape Sensitivity Errors," (Technical Note) to be published in the AIAA Journal, **28** (7): 1322-1324.

177. Barthelemy, B., and Haftka, R. T., (1990) "Accuracy Analysis of the Semi-Analytical Method for Shape Sensitivity Calculation," *Mechanics of Structures and Machines*, **18** (3): 407-432.

178. Haftka, R. T., Cohen, G. A., and Mróz, Z., (1990) "Derivatives of Buckling Loads and Vibration Frequencies with Respect to Stiffness and Initial Strain Parameters," *Journal of Applied Mechanics*, **57**: 18-24, March.

179. Burdisso, R. A., and Haftka, R. T., (1990) "Statistical Analysis of Static Shape Control in Large Space Structures," *AIAA Journal*, **28** (8): 1504-1508.

180. Martinovic, Z. N., Schamel, G., Haftka, R. T., and Hallauer, W. L., (1990) "An Analytical and Experimental Investigation of Output Feedback vs. Linear Quadratic Regulator," *Journal of Guidance, Control and Dynamics*, **13** (1): 160-167.

181. Thareja, R., and Haftka, R. T., (1990) "Efficient Single-Level Solution of Hierarchial Problems in Structural Optimization," *AIAA Journal*, **28** (3): 506-514.

182. Sandridge, C. A., and Haftka, R. T., (1989) "Accuracy of Eigenvalue Derivatives from Reduced Order Structural Models," *Journal of Guidance, Control and Dynamics*, **12** (6): 822-829.

183. Haftka, R. T., (1989) "Integrated Nonlinear Analysis and Design," *AIAA Journal*, **27** (11): 1622-1627.

184. Watson, L. T., and Haftka, R. T., (1989) "Modern Homotopy Methods in Optimization," *Computer Methods in Applied Mechanics and Engineering*, **76**: 289-305.

185. Haftka, R. T., and Adelman, H (1989) "Recent Developments in Structural Sensitivity Analysis," Structural Optimization, **1**: 137-151.

186. Haftka, R. T., and Kapania, R. K., (1989) "Sensitivity of Actively Damped Structures to Imperfections and Modeling Errors," *AIAA Journal*, **27** (10): 1436-1440.

187. Burdisso, R. A., and Haftka, R. T., (1989) "Optimal Location of Actuators for Correcting Distortions in Large Space Structures," *AIAA Journal*, **27** (10): 1406-1411.

188. Dems, K. and Haftka, R. T., (1989) "Two Approaches to Sensitivity Analysis for Shape Variation in Structures," *Mechanics of Structures and Machines*, **16** (4): 501-522.

189. Barthelemy, B. M. Haftka, R. T. and Cohen, G. A., (1989) "Physically Based Sensitivity Derivatives for Structural Analysis Programs," *Computational Mechanics*, **4** (6): 465-476.

190. Haftka, R. T. and Kamat, M. P., (1989) "Simultaneous Nonlinear Structual Analysis and Design," *Computational Mechanics*, **4** (6): 409-416.

191. Cohen, G. A. and Haftka, R. T., (1989) "Sensitivity of Buckling Loads of Anisotropic Shells of Revolution to Geometric Imperfection and Design Changes," *Computers and Structures*, **31** (6): 985-995.

192. Haftka, R. T., Grossman, B., Eppard, W. M., Kao, P. J. and Polen, D., (1989) "Efficient Optimization of Integrated Aerodynamic-Structural Design," *International Journal for Numerical Methods in Engineering*, **28**: 593-607.

193. Greene, W. H. and Haftka, R. T., (1989) "Computational Aspects of Sensitivity Calculations in Transient Structural Analysis," *Computers and Structures*, **32** (2): 433-443.

194. Padula, S. L., Adelman, H. M., Bailey, M. C. and Haftka, R. T., (1989) "Integrated Structural Electromagnetic Shape Control of Large Space Antenna Reflectors," *AIAA Journal*, **27** (6): 814-819.

195. Shin, Y. S., Haftka, R. T., Watson, L. T. and Plaut, R. H., (1989) "Design of Laminated Plates for Maximum Buckling Load," *Journal of Composite Materials*, **23:** 48-370.

196. Gürdal, Z. and Haftka, R. T., (1988) "Automated Design of Composite Plates for Improved Damage Tolerance," Composite Materials: Testing and Design ASTM STP 972, J.D. Whitcomb, ed., *American Society for Testing and Materials*, Philadelphia, pp. 5-22.

197. Barthelemy, B., Chon, C. T. and Haftka, R. T., (1988) "Accuracy Problems Associated with Semi-Analytical Derivatives of Static Response," *Finite Elements in Analysis and Design*, **4**: 249-265.

198. Grossman, B., Strauch, G., Eppard, W. H., Gürdal, Z. and Haftka, R. T., (1988) "Integrated Aerodynamic/Structural Design of a Sailplane Wing," *Journal of Aircraft*, **25** (9): 855-860.

199. Shin, Y., Haftka, R. T. and Plaut, R. H., (1988) "Simultaneous Analysis and Design for Eigenvalue Maximization," *AIAA Journal*, **26** (6): 738-744.

200. Murthy, D. V. and Haftka, R. T., (1988) "Approximations to Eigenvalues of Modified General Matrices," *Computers and Structures*, **29** (5): 903-917.

201. Shin, Y., Haftka, R. T., Watson, L. T. and Plaut, R. H., (1988) "Tracing Structural Optima as a Function of Available Resources by a Homotopy Method," *Computer Methods in Applied Mechanics and Engineering*, **70** (2): 151-164, September.

202. Haftka, R. T., (1988) "First- and Second-Order Constraint Approximations in Structural Optimization," *Computational Mechanics*, **3**: 89-104.

203. Murthy, D. and Haftka, R. T., (1988) "Derivatives of Eigenvalues and Eigenvectors of a General Complex Matrix," *International Journal for Numerical Methods in Engineering*, **26**: 293-311.

204. Haftka, R. T. and Starnes, J. H., Jr., (1988) "Stiffness Tailoring for Improved Compressive Strength of Composite Plates with Holes," *AIAA Journal*, **26** (1): 72-77.

205. Pritchard, J. I., Adelman, H. M. and Haftka, R. T., (1987) "Sensitivity Analysis and Optimization of Nodal Point Placement for Vibration Reduction," *Journal of Sound and Vibration*, **119** (2): 277-289.

206. Haftka, R. T., Nachlas, J. A., Watson, L. A., Rizzo, T. and Desai, R., (1987) "Two Point Constraint Approximation in Structural Optimization," *Computer Methods in Applied Mechanics and Engineering*, **60** (3): 289-301, February.

207. Camarda, C. J., Haftka, R. T. and Riley, M. F., (1987) "An Evaluation of Higher-Order Modal Methods for Calculating Transient Structural Response," *Computers and Structures*, **27**: 89-101.

208. Gürdal, Z. and Haftka, R. T., (1987) "A Compressive Failure Model for Anisotropic Plates with a Cutout," *AIAA Journal*, **25** (11): 1476-1481.

209. Robeson, D. E., Jr., Haftka, R. T. and Sundkvist, K. E., (1987) "Potential of Optimal Ship Structure Redesign for Minor Collisions," *Journal of Ship Research*, **31** (1): 53-59, March.

210. Onoda, J. and Haftka, R. T., (1987) "An Approach to Simultaneous Structure/Control Simultaneous Optimization for Large Flexible Spacecraft," *AIAA Journal*, **25** (8): 1133-1138.

211. Haftka, R. T. and Adelman, H. M., (1987) "The Effect of Sensor and Actuator Errors on Static Shape Control of Large Space Structures," *AIAA Journal*, **25** (1): 134-138.

212. Haftka, R. T. and Adelman, H. M., (1987) "The Effect of Sensor and Actuator Errors on Static Shape Control of Large Space Structures," *AIAA Journal*, **25** (1): 134-138.

213. Haftka, R. T. and Mróz, Z., (1986) "First and Second-Order Sensitivity Analysis of Linear and Nonlinear Structures," *AIAA Journal*, **24**: 1187-1192.

214. Haftka, R. T. and Grandhi, R. V., (1986) "Structural Shape Optimization -A Survey," *Computer Methods in Applied Mechanics and Engineering*, **57**: 91-106.

215. Adelman, H. M. and Haftka, R. T., (1986) "Sensitivity Analysis for Discrete Structural Systems," *AIAA Journal*, **24**: 823-832.

216. Grandhi, R. V., Haftka, R. T. and Watson, L. T., (1986) "Design Oriented Identification of Critical Time in Transient Response," *AIAA Journal*, **24** (4): 649-656.

217. Grandhi, R. V., Haftka, R. T. and Watson, L. T., (1986) "Efficient Identification of Critical Stresses in Structures Subject to Dynamic Loads," *Computers and Structures*, **22** (3): 373-386.

218. Haftka, R. T., (1986) "Structural Optimization with Aeroelastic Constraints - A Survey of US Applications," *International Journal of Vehicle Design*, **7**: 381-392.

219. Gürdal, Z., Haftka, R. T. and Starnes, J. H., Jr., (1985) "The Effect of Slots on the Buckling and Postbuckling Behavior of Laminated Plates," *ASTM Journal of Composite Technology and Research*, **7** (3): 82-87, Fall.

220. Haftka, R. T., Martinovic, Z. and Hallauer, W. L., (1985) "Enhanced Vibration Controllability by Minor Structural Modifications," *AIAA Journal*, **23** (8): 1260-1266.

221. Haftka, R. T., (1985) "Sensitivity Calculations for Iteratively Solved Problems," *International Journal for Numerical Methods in Engineering*, **21**: 1535-1546.

222. Grandhi, R. V., Thareja, R. and Haftka, R. T., (1985) "NEWSUMT-A: A General Purpose Program for Constrained Optimization Using Constraint Approximations," *ASME Journal of Mechanisms, Transmission and Automation in Design*, **107**: 94-99, March.

223. Gürdal, Z. and Haftka, R. T., (1985) "Design of Stiffened Composite Panels with a Fracture Constraint," *Computers and Structures*, **20** (1-3): 457-465.

224. Haftka, R. T., (1985) "Simultaneous Analysis and Design," *AIAA Journal*, **23** (7): 1099-1103.

225. Haftka, R. T. and Adelman, H. M., (1985) "Selection of Actuator Locations for Static Shape Control of Large Space Structures by Heuristic Integer Programming," *Computers and Structures*, **20** (1-3): 575-582.

226. Gürdal, Z. and Haftka, R. T., (1985) "Sensitivity Derivatives for Static Test Loading Boundary Conditions," (technical note) *AIAA Journal*, **23:** 159-160, January.

227. Nissim, E. and Haftka, R. T., (1985) "Optimization of Cascade Blade Mistuning, Part II: Global Optimum and Numerical Optimization," *AIAA Journal*, **23**: 1402-1410.

228. Haftka, R. T. and Adelman, H. M., (1985) "An Analytical Investigation of Shape Control of Large Space Structures by Applied Temperatures," *AIAA Journal*, **23**: 450-457.

229. Haftka, R. T., (1984) "Optimum Placement of Controls for Static Deformations of Space Structures," *AIAA Journal*, **22**: 1293-1298.

230. Haftka, R. T., (1984) "An Improved Computational Approach for Multi- Level Optimum Design," *Journal of Structural Mechanics*, **12** (2): 245-261.

231. Haftka, R. T., (1983) "Damage Tolerant Design Using Collapse Techniques," *AIAA Journal*, **21** (10): 1462-1466, October.

232. Haftka, R. T., (1983) "Design for Temperature and Thermal Buckling Constraints Employing a Non-Eigenvalue Formulation," *Journal of Spacecraft and Rockets*, **20** (4): 363-367, July-August.

233. Haftka, R. T., Starnes, J. H. and Nair, S., (1983) "Design for Global Damage Tolerance and Associated Mass Penalties," *Journal of Aircraft*, **20**: 83-88, January.

234. Haftka, R. T., (1982) "Second-Order Sensitivity Derivatives in Structural Analysis," (technical note) *AIAA Journal*, **20**: 1765-1766, December.

235. Prasad, B. and Haftka, R. T., (1982) "Organization of PARS - a Structural Resizing System," *Advances in Engineering Software*, **4**: 9-19, January.

236. Haftka, R. T. and Malkus, D. S., (1981) "Calculation of Sensitivity Derivatives in Thermal Problems by Finite Differences," *International Journal for Numerical Methods in Engineering*, pp. 1811-1821.

237. Haftka, R. T. and Prasad, B., (1981) "Optimum Structural Design with Plate Bending Elements - A Survey," *AIAA Journal*, **19**: 517-522.

238. Prasad, B., Haftka, R. T. and Bao, M. S., (1981) "Optimum Design of an Abrasive Disk," *Journal of Mechanical Design, ASME*, **103**: 818-822, October.

239. Haftka, R. T., (1981) "Techniques for Thermal Sensitivity Analysis," *International Journal for Numerical Methods in Engineering*, **17**: 71-80.

240. Prasad, B. and Haftka, R. T., (1979) "Optimal Structural Design with Plate Finite Elements," *Journal of the Structural Division, ASCE,* **105** (ST11): 2367-2382.

241. Starnes, J. H., Jr. and Haftka, R. T., (1979) "Preliminary Design of Composite Wings for Buckling, Stress and Displacement Constraints," *Journal of Aircraft*, **16**: 564-570.

242. Prasad, B. and Haftka, R. T., (1979) "A Cubic Extended Interior Penalty Function for Structural Optimization," *International Journal for Numerical Methods in Engineering*, **14**: 1107-1126.

243. Haftka, R. T. and Prasad, B., (1979) "Programs for Analysis and Resizing of Complex Structures," *Computers and Structures*, **10**: 323-330.

244. Haftka, R. T., (1977) "Optimization of Flexible Wing Structures Subject to Strength and Induced Drag Constraints," *AIAA Journal*, **14** (8): 1101-1106.

245. Haftka, R. T. and Yates, E. C., Jr., (1976) "Repetitive Flutter Calculations in Structural Design," *Journal of Aircraft*, **13**: 454-461.

246. Haftka, R. T. and Starnes, J. H., Jr., (1976) "Applications of a Quadratic Extended Interior Penalty Functions for Structural Optimization," *AIAA Journal*, **14**: 718-724.

247. Haftka, R. T., Starnes, J. H., Jr., Barton, F. W. and Dixon, S. C., (1975) "Comparison of Two Types of Structural Optimization Procedures for Flutter Requirements," *AIAA Journal*, **13**: 1333-1339.

248. Singer, J. and Haftka, R. T., (1975) "Buckling of Discretely Stringer Stiffened Shells and Elastically Restrained Panels," (Synoptic), *AIAA Journal*, **13**: 849-850.

249. Haftka, R. T., (1975) "Parametric Constraints with Application to Optimization for Flutter Using a Continuous Flutter Constraint," *AIAA Journal*, **13**: 471-475.

250. Haftka, R. T. and Robinson, J. C., (1973) "Effect of Out-of-Planeness on Membrane Quadrilateral Elements," (technical note), *AIAA Journal*, **11**: 742-744.

251. Haftka, R. T., Mallett, R. H. and Nachbar, W., (1971) "Relation of the Static Perturbation Technique to Koiter's Method," *Israel Journal of Technology*, **9**: 553-557.

252. Haftka, R. T., Mallett, R. H. and Nachbar, W., (1971) "Adaption of Koiter's Method to Finite Element Analysis of Snap-Through Buckling Behavior," *International Journal of Solids and Structures*, **7**: 1427-1445.

253. Haftka, R. T. and Nachbar, W., (1970) "Postbuckling Analysis of an Elastically – Restrained Column," *International Journal of Solids and Structures*, **6**: 1433-1449.

254. Singer, J. and Haftka, R. T., (1968) "Buckling of Discretely Stiffened Cylindrical Shells," *Israel Journal of Technology*, **6**: 125-137.

CONFERENCE PAPERS AND NASA REPORTS

1. Bhatia, M., Kapania, R., Van Hoek, M. and Haftka R. T., (2009) "Structural Design of a Truss Braced Wing: Potential and Challenges", AIAA-2009-2147, *10th AIAA Gossamer Spacecraft Forum*, Palm Springs, CA, USA May 4-7.

2. Ramu, P., Kim, N.H. and Haftka R.T., (2009) "Multiple Tail Median and Bootstrap Technique for Conservative Reliability Estimates in Design Optimization" AIAA-2009-2256, *50th AIAA/ASME/ASCE/ASC Structures, Structural Dynamics, and Materials Conference*, Palm Springs, USA, May 4 - 7.

3. Gogu, C., Haftka, R.T., Le Riche, R., Molimard, J., Vautrin, A. and Sankar, B. V., (2009) ,"Bayesian Statistical Identification of Orthotropic Elastic Constants Accounting for Measurement and Modeling Errors", AIAA-2009-2258, *11th AIAA Non-Deterministic Approaches Conference*, Palm Springs, USA, May 4-7.

4. Viana, F.A.C. and Haftka, R.T., (2009) "Importing Uncertainty Estimates from One Surrogate to Another," AIAA-2009-2237, *50th AIAA/ASME/ASCE/AHS/ASC Structures*, *Structural Dynamics, and Materials Conference*, Palm Springs, USA, May 4 - 7.

5. Ravishankar, B., Smarslok, B. P., Haftka, R.T. and Sankar, B. V., (2009) "Separable Sampling of the Limit State for Accurate Monte Carlo Simulations," AIAA-2009-2266, *50th AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics, and Materials Conference*, Palm Springs, USA, May 4 - 7.

6. Coppe, A., Haftka, R.T., Kim, N.H. and Yuan, F.G, (2009) "Statistical Characterization of Damage Propagation Properties in Structural Health Monitoring", AIAA-2009-2267, *50th AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics, and Materials Conference*, Palm Springs, USA, May 4 - 7.

7. Sharma, A, Sankar, B.V. and Haftka, R.T., (2009) "Multi-Fidelity Analysis of Corrugated-Core Sandwich Panels for Integrated Thermal Protection Systems", AIAA-2009-2201, 50th *AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics, and Materials Conference*, Palm Springs, USA, May 4 - 7.

8. Lin, Y.C., Haftka, R.T., Queipo, N.V. and Fregly, B.J., "Dynamic simulation of knee motion using three-dimensional surrogate contact modeling," *Proceedings of the 2008 Summer Bioengineering Conference,* San Marco Island, Florida, 2008.

9. Kumar, S., Villanueva, D., Sankar, B.V., and Haftka, R.T., "Probabilistic Optimization of Integrated Thermal Protection System," AIAA-2008-5928, *12th AIAA/ISSMO Multidisciplinary Analysis and Optimization Conference*, Victoria, British Columbia, Canada, Sept 10-12, 2008.

10. Coppe, A., Haftka, R.T., Kim,N.H., and Bes, C., "A Statistical Model for Estimating Probability of Crack Detection," *International Conference on Prognostics and Health Management,* Denver, Colorado, Oct 06-10, 2008.

11. Coppe, A., Haftka, R.T., Kim,N.H., and Ramu, P., "Optimization of Distribution Parameters for Estimating Probability of Crack Detection," AIAA-2008-5943, *12th AIAA/ISSMO Multidisciplinary Analysis and Optimization Conference*, Victoria, British Columbia, Canada, Sept 10-12, 2008.

12. Viana, F.A.C., and Haftka, R. T., "Using Multiple Surrogates for Minimization of the RMS Error in Meta-Modeling," *Proceedings of the ASME 2008 International Design Engineering Technical Conferences & Computers and information in Engineering Conference – IDETC/CIE 2008*, New York City, USA, August 3-6, 2008.

13. Smarslok, B.P., Haftka, R.T., and Ifju, P., "A Correlation Model for Graphite/Epoxy Properties for Propagating Uncertainty to Strain Response," *23rd Annual Technical Conference of the American Society for Composites*, Memphis, Tenn, 2008.

14. Picheny, V., Kim, N and Haftka, R.T., "Conservative Predictions Using Surrogate Modeling," AIAA-2008-1716, *49th AIAA/ASME/ASCE/AHS/ASC Structures*, *Structural Dynamics, and Materials Conference*, 2008.

15. Smarslok, B.P., Alexander, D., Haftka, R.T., Carraro, L., and Ginsbourger, D., "Separable Monte Carlo applied to laminated composite plates reliability," AIAA-2008-1751, *49th AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics, and Materials Conference*, Schaumburg, IL, April 7-10, 2008.

16. Sharma, A., Gogu, C., Martinez, O.A., Sankar, B.V., Haftka, R.T., "Multi-fidelity Design of an Integrated Thermal Protection System for Spacecraft Reentry," AIAA-2008-2062, *49th AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics, and Materials Conference*, Schaumburg, IL, April 7-10, 2008.

17. Venkataraman, S., Haftka, R.T., "Teaching Undergraduate Aerospace Structural Analysis – Preparing Students for Future Workforce", AIAA-2008-2183, *49th AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics, and Materials Conference*, Schaumburg, IL, April 7-10, 2008.

18. Viana, F.A.C., Haftka, R.T., Steffen Jr, V., Butkewitsch, S., and Leal, M.F., "Ensemble of Surrogates : A Framework based on minimization of the mean integrated square error," AIAA-2008-1885, *49th AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics, and Materials Conference, 16th AIAA/ASME/AHS Adaptive Structures Conference, 10th AIAA Non-Deterministic Approaches Conference, 9th AIAA Gossamer Spacecraft Forum, 4th AIAA Multidisciplinary Design Optimization Specialist Conference*, Schaumburg, USA, April 7-10, 2008.

19. Goel, T., Haftka, R.T., and Shyy, W., "Error Measures for Noise-free Surrogate Approximations," AIAA 2008-901, *46th AIAA Aerospace Sciences Meeting and Exhibit*, 7-10 January 2008, Reno, Nevada, Paper No.

20. Gogu, C., Matsumura, T., Haftka, R. T., Rao, A. V., "Aero-assisted orbital transfer vehicle trajectory optimization considering thermal protection system weight", AIAA paper 2008-898, *46th AIAA Aerospace Sciences Meeting and Exhibit*, Reno, NV, January 2008.

21. Picheny, V., Kim, N., and Haftka, R.T., "Conservative estimations of reliability with limited sampling", ASME 2007 International Design Engineering Technical Conferences & Computers and Information in Engineering Conference (IDETC/CIE 2007), 2007.

22. Gogu, C., Smarslok, B. P., Haftka, R. T., Sankar, B. V., "Worst-case effects on thermal buckling of spatial variability in material properties," *22nd Annual American Society for Composites Technical Conference,* Seattle, WA, September 2007.

23. Smarslok, B. P., Gogu, C., Haftka, R. T., Ifju P. G., "Detecting and Analyzing Non-uniformity in Mechanical and Thermal Properties of Composite Laminates", *22nd Annual American Society for Composites Technical Conference,* Seattle, WA, September 2007.

24. Gogu, C., Haftka, R. T., Bapanapalli, S. K., Sankar, B. V., "Reducing the number of variables in a response surface approximation – Application to thermal design", ASME paper DETC2007-34674, *ASME 2007 International Design Engineering Technical Conferences & Computer and Information in Engineering Conference IDETC/CIE 2007,* Las Vegas, NV, September, 2007.

25. Goel, T., Dorney, D.J., Haftka, R.T., and Shyy, W., "Improving the Hydrodynamic Performance of Diffuser Vanes via Shape Optimization," AIAA-2007-5551, *43rd AIAA/ASME/SAE/ASEE Joint Propulsion Conference*, Cincinnati, OH, July 8-11, 2007.

26. Mack, Y., Haftka, R., Segal, C., Queipo, N., and Shyy, W., "Computational modeling and sensitivity evaluation of liquid rocket injector flow," AIAA-2007-5592, *43rd AIAA/ASME/SAE/ASEE Joint Propulsion Conference*, Cincinnati, OH, July 8-11, 2007.

27. Samad, A., Lee, K-D., Kim, K-Y., and Haftka, R.T. "Application of Multiple-Surrogate Model to Optimization of a Dimpled Channel," 7th World Congresses of Structural and Multidisciplinary Optimization, Seoul, Korea, May, 2007.

28. Gogu, C., Haftka, R. T., Bapanapalli, S. K., Sankar, B. V., "Applying dimensional analysis to response surface methodology to reduce the number of design variables," 7th World Congresses of Structural and Multidisciplinary Optimization, Seoul, Korea, May, 2007.

29. Friedmann, P., Glaz, B., Liu, L., Goel T., and Haftka, R.T., "Application of a Weighted Average Surrogate Approach to Helicopter Rotor Blade Vibration Reduction," AIAA-2007-1898, *48th AIAA/ASME/ASCE-/AHS/ASC Structures, Structural Dynamics, and Materials Conference,* , Honolulu, Hawaii, Apr. 23-26, 2007.

30. Acar, E., Kumar, S., Pippy, R.J., Kim, N.H., and Haftka, R.T., (2007) "Approximate Probabilistic Optimization using Exact-Capacity-Approximate-response distribution (ECARD)," AIAA-2007-1973, 9th Non-Deterministic Approaches Conference, April 2007, Honolulu, HI.

31. Acar, E., An, J., Haftka, R. T., Kim, N.H., Ifju, P.J., and Johnson, T. F. "Options for Using Test Data to Update Failure Stress," AIAA-2007-1971, 9th Non-Deterministic Approaches Conference, April 2007, Honolulu, HI.

32. Gogu, C., Bapanapalli, S. K., Haftka, R. T., Sankar, B.V., "Comparison of Materials for Integrated Thermal Protection Systems for Spacecraft Reentry," AIAA paper 2007-1860, 3rd AIAA Multidisciplinary Design Optimization Specialist Conference, Honolulu, HI, April, 2007.

33. Ramu, P., Kim, N.H., and Haftka, R.T., "Inverse measure-based tail modeling approaches for structural reliability estimation," AIAA-2007-1947, *48th AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics and Materials Conference,* Honolulu, Hawaii, Apr. 23-26, 2007.

34. Ramu, P., Kim, N.H., and Haftka, R.T., "Error Amplification in Failure Probability Estimates of Small Errors in Surrogates," *SAE 2007 world congress*, Detroit, Michigan, April 16-19, 2007.

35. Smarslok, B.P., Gogu, C., Haftka, R.T., and Ifju, P., "Detecting and analyzing non-uniformity in mechanical and thermal properties of composite laminates," *22nd Annual Technical Conference of the American Society for Composites*, 54, Seattle, Washington, 2007.

36. Gogu, C., Smarslok, B.P., Haftka, R.T., and Sankar, B.V., "Worst-case effects on thermal buckling of spatial variability in material properties," *22nd Annual Technical Conference of the American Society for Composites*, 59, Seattle, Washington, 2007.

37. Lin, Y.-C., Haftka, R.T., Queipo, N.V., and Fregly, B.J., "Sensitivity of knee simulator machine wear volume to variations in motion and loads inputs and component placements*," Proceedings of the XXI Congress of the International Society of Biomechanics,* July 1-5, Taipai, Taiwan, 2007.

38. Martinez, O.A., Sankar, B.V.,Haftka, R.T., "Thermal Analysis of a Corrugated Core Sandwich Panel for Integral Thermal Protection System," *21st Annual Technical Conference of the American Society for Composites*, CD ROM Proceedings, University of Michigan, Dearborn, MI, September 2006, Paper #219.

39. Ramu, P., Kim, N.H., and Haftka, R.T., "Inverse measure estimation for high reliability using low-number Monte Carlo Simulations," 11th AIAA/ISSMO Multidisciplinary Analysis and Optimization Conference, Portsmouth, Virginia, 6-8 September 2006.

40. Picheny, V., Kim, N.H., Peters, J., and Haftka, R.T., "Conservative estimate of probability of failure," 11th AIAA/ISSMO Multidisciplinary Analysis and Optimization Conference, Portsmouth, Virginia, 6-8 September 2006.

41. Goel, T., Queipo, N.V., Shyy, W., and Haftka, R.T., "Performance Estimate and Simultaneous Application of Multiple Surrogates," 11th AIAA/ISSMO Multidisciplinary Analysis and Optimization Conference, Portsmouth, Virginia, 6-8 September 2006.

42. Picheny, V., Kim, N. H., and Haftka, R.T., "Conservative Estimation of Cumulative Distribution Function for Probability of Failure Calculation", 11th AIAA/ISSMO Multidisciplinary Analysis and Optimization Conference, Portsmouth, Virginia, 6-8 September 2006.

43. Ramu, P. Kim, N. and Haftka, R.T., "Estimation of high reliability using low-number Monte-Carlo simulations", AIAA Paper 2006-7011, 11th AIAA/ISSMO Multidisciplinary Analysis and Optimization Conference, Sept 6-8, 2006, Portsmouth, VA.

44. Queipo, N.V., Verde, A., Pintos, S., and Haftka, R.T. (2006), "Assessing the Value of Another Cycle in Surrogate-Based Optimization," AIAA Paper 2006-7089, 11th AIAA/ISSMO Multidisciplinary Analysis and Optimization Conference, Sept 6-8, Portsmouth, VA.

45. Goel, T., Haftka, R. T., Shyy, W., "Simultaneous Use of Multiple Surrogates," 11th AIAA/ISSMO Multidisciplinary Analysis and Optimization, 6 Sept-8 Sept 2006, (Portsmouth, VA).

46. Samad, A., Kim, K-Y, Goel, T, Haftka, R.T. Shyy W. (2006), "Shape Optimization of Turbomachinery Blade Using Multiple Surrogate Models," 10th International Symposium on Advances in Numerical Modeling of Aerodynamics and Hydrodynamics in Turbomachinary, ASME Joint-U.S.-European Fluids Engineering Summer Meeting, July, Miami, FL, USA, FEDSM2006-98368.

47. Acar, E., Haftka, R.T., Fragola, L. and Butkewitsch, S., "Multidisciplinary Design Optimization of an Aircraft Tail Junction," *7th World Congress on Computational Mechanics,* Los Angeles, California, July 2006

48. Picheny, V., Haftka. R.T., "Using bootstrap methods for conservative estimations of reliability," NSF Design, Service, and Manufacturing Grantees and Research Conference, 24 July-27 July 2006, (St. Louis, Missouri).

49. Goel, T., Haftka, R.T., Shyy, W., Watson, L.T., "Combining Bias and Variance Based Criterion for Selecting Experimental Designs". NSF Design, Service, and Manufacturing Grantees and Research Conference, 24 July - 27 July 2006, (St. Louis, Missouri).

50. Samad, A., Kim, K.-Y., Goel, T., Haftka, R. T., Shyy, W., "Shape Optimization of Turbomachinery Blade Using Multiple Surrogate Models," 2006 ASME Joint US-European Fluids Engineering Summer Meeting (FEDSM-2006),19 July-23 July 2006, (Miami, FL).

51. Goel, T., Zhao, J., Thakur, S., Haftka, R.T., Shyy, W., "Surrogate Model-based Strategy for Cryogenic Cavitation Model Validation and Sensitivity Evaluation," 42nd AIAA/ASME/SAE/ASEE Joint Propulsion Conference and Exhibit ,9 July-12 July 2006, (Sacramento, CA).

52. Lin, Y.-C., Haftka, R.T., Queipo, N.V., and Fregly, B.J., "A generalized surrogate contact model for dynamic simulations with anatomic joints," *Proceedings of the 2006 Summer Bioengineering Conference, The American Society of Mechanical Engineers,* Amelia Island, Florida, 2006.

53. Goel, T., Haftka, R.T., Shyy, W., Watson, L.T., "Pointwise Average Bias Error Estimates for Response Surface Approximations," 44th AIAA Aerospace Sciences Meeting and Exhibit, 9 Jan-12 Jan 2006, (Reno, Nevada).

54. Leifur Thor Leifsson, W. H. Mason, J. A. Schetz, B. Grossman, and R. T. Haftka,, "Multidisciplinary Design Optimization of Low-Airframe-Noise Transport Aircraft," 44th AIAA Aerospace Sciences Meeting and Exhibit, Reno, NV, AIAA-2006-0230, Jan. 9, 2006

55. Bapanapalli S.K., Martinez O.A., Gogu C., Sankar B.V., Haftka R.T., Blosser M.L., "Analysis and design of corrugated-core sandwich panels for thermal protection systems of space vehicles," 47th AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics, and Materials Conference, Newport, RI, May 2006.

56. Bapanapalli S.K., Martinez O.A., Sankar B.V., Haftka R.T., and Blosser M.L., "Micromechanical Analysis of Composite Truss-core Sandwich Panels for Integral thermal protection systems," 47th AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics, and Materials Conference, Newport, RI, May 2006.

57. Mack, Y., Shyy, W., Haftka, R., Griffin, L., Snellgrove, L., Huber, F., "Radial Turbine Preliminary Aerodynamic Design Optimization for Expander Cycle Liquid Rocket Engine," 42nd AIAA/ASME/SAE/ASEE Joint Propulsion Conference & Exhibit, AIAA-2006-5046, Sacramento, California, July 9 – 12, 2006.

58. Smarslok, B., Speriatu, L., Schulz, W., Haftka, R. T., Ifju, P., Johnson, T. F., "Experimental Uncertainty in Temperature Dependent Material Properties of Composite Laminates," Society for Experimental Mechanics Annual Conference, No. 241, St. Louis, MO, June, 2006.

59. Smarslok, B. P., Haftka, R. T., Kim, N. H., "Taking Advantage of Separable Limit States in Sampling Procedures," 47th AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics, and Materials Conference, Newport, RI, May, 2006.

60. Acar, E. and Haftka, R.T., "Reliability Based Aircraft Structural Design Pays Even with Limited Statistical Data," AIAA Paper 2006-2059, 47th AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics, and Materials Conference, Newport, Rhode Island, May 2006.

61. Kale, A.A., and Haftka, R.T., "Effect of Safety Measures on reliability of Aircraft structures subjected to damage growth," ASME 2005 International Design Engineering Technical Conferences & Computers and Information in Engineering Conference (IDETC/CIE 2005), 2005.

62. Acar, E., Haftka, R.T. and Johnson, T.F., "Effects of Uncertainty Reduction on Weight of Composite Laminates at Cryogenic Temperatures," 31st ASME Design Automation Conference, Long Beach, California, September 2005.

63. Acar, E., Haftka, R.T. and Sankar, B.V., "The Effects of Uncertainty Control Measures on the Design Load of a Sandwich Structure," 3rd Ankara International Aerospace Conference, Ankara, Turkey, August 2005.

64. Gern, F., Ko A., Grossman, B., Haftka, R.T., Kapania R.K. and W.H. Mason, "Transport Weight Reduction through MDO: the Strut-Braced Wing Transonic Transport," 35th AIAA Fluid Dynamics Conference and Exhibit, Toronto, Canada, AIAA-2005-4667, June 6-9, 2005.

65. Lin, Y-C, Fregly, B.J., Haftka, R.T., and Queipo, N.V., "Surrogate-Based Contact Modeling for Efficient Dynamic Simulation with Deformable Anatomic Joints," Proceedings of the 10th International Symposium on Computer Simulation in Biomechanics, Case Western Reserve University, July 28-30, 2005.

66. Acar, E., and Haftka, R.T., "Reliability Based Aircraft Structural Design Optimization with Uncertainty about Probability Distributions," 6th World Congress on Structural and Multidisciplinary Optimization, Rio de Janeiro, Brazil, May 30-June 3, 2005.

67. Zhu, H., Sankar, B.V., and Haftka, R.T., "Evaluation of Integrated Sandwich TPS Design with Metal Foam Core for Launch Vehicles," AIAA paper 2005-2181, 46th AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics & Materials Conference, Austin, TX, April 18-21, 2005.

68. Acar, E., Haftka, R.T., Sankar, B.V. and Qui, X., "Increasing Design Load and Reducing Weight of Structures by Error Reduction," AIAA paper 2145-2167,46th AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics & Materials Conference, Austin, TX, April 18-21, 2005.

69. Kale, A. A., Haftka, R.T., and Sankar, B.V., "Reliability Based Design and Inspection of Stiffened Panels Against Fatigue," AIAA paper 2005-2145,46th AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics & Materials Conference, Austin, TX, April 18-21, 2005.

70. Schutte, J.F., and Haftka, R.T., "Improved Global Convergence Probability Using Independent Swarms," AIAA paper 2005-1896, 46th AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics & Materials Conference, Austin, TX, April 18-21, 2005.

71. Haftka, R.T., "Reflections on Jim Starnes' Technical Contributions," AIAA paper 2005-1872, 46th AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics & Materials Conference, Austin, TX, April 18-21, 2005.

72. Goel T, Mack Y, Haftka RT, Shyy W, Queipo N.V., "Interaction between Grid and Design Space Refinement for Bluff Body-Facilitated Mixing," 43rd AIAA Aerospace Sciences Meeting and Exhibit. Reno NV 2005, Paper No. 2005-0125, AIAA.

73. Mack Y, Goel T, Shyy W, Haftka RT, Queipo N.V., "Multiple Surrogates for the Shape Optimization of Bluff Body-Facilitated Mixing," 43rd AIAA Aerospace Sciences Meeting and Exhibit. Reno NV 2005, Paper No. 2005-0333, AIAA.

74. Kurdi, M. H.; Haftka, R. T.; Schmitz, T. L.; Mann, B. P., "Simultaneous Optimization of Removal Rate and Part Accuracy in High-Speed Milling," Proceedings of ASPE 2004 Annual Meeting October 24-29, 2004, Orlando, FL.

75. Groenwold, A.A. and Haftka, R.T. "Difficulties with non-homogeneous failure criteria like Tsai-Wu for composite laminates," The Seventh International Conference on Computational Structures Technology, (Topping, B.H.V. and Mota Soares, C.A., editors), Lisbon, Portugal, September 2004.

76. Acar, E., Kale, A.A., and Haftka, R.T., "Effects of Error, Variability, Testing and Safety Factors on Aircraft Safety," NSF Workshop on Reliable Engineering Computing, Savannah, GA, 15-17, Sept. 2004.

77. Gurav, S.P., Kasyap, A., Sheplak, M, Cattafesta, L., Haftka R. T., Goosen, J.F.L., Keulen, F.V., "Uncertainity-based Design Optimization of a Micro Piezoelectric Composite Energy Reclamation Device," Proceedings of the 10th AIAA/ISSMO Multidisciplinary Analysis and Optimization Conference, 30 August - 1 September 2004, Albany, NY, AIAA Paper 2004-4619.

78. Kale A. A., Haftka R. T., Sankar B. V., "Tradeoff of Structural Weight and Inspection Cost in Reliability Based Optimization Using Multiple Inspection Types," Proceedings of the 10th AIAA/ISSMO Multidisciplinary Analysis and Optimization Conference, 30 August - 1 September 2004, Albany, NY, AIAA Paper 20044404.

79. Ramu, P., Missoum, S., and Haftka R.T., "A Convex Hull Approach for the Reliability-Based Design Optimization of Transient Dynamic Problems," Proceedings of the 10th AIAA/ISSMO Multidisciplinary Analysis and Optimization Conference, 30 August - 1 September 2004, Albany, NY, AIAA Paper 2004-4618.

80. Goel T, Vaidyanathan R, Haftka R T, Queipo N V, Shyy W, Tucker K, "Response Surface Approximation of Pareto Optimal Front in Multi-Objective Optimization," 10th AIAA/ISSMO Multidisciplinary Analysis and Optimization Conference, 30 August - 1 September 2004, Albany, NY, paper AIAA-2004-4501.

81. Grosset, L., Le Riche, R., and Haftka, R.T. "A Two-Tier Estimation of Distribution Algorithm for Composite Laminate Optimization," Proc. 10th AIAA/ISSMO Multidisciplinary Analysis and Optimization Conference, 30 August - 1 September 2004, Albany, NY, paper AIAA-2004-4529.

82. Papila, M., Haftka, R. T., Mason, W. H., Alves, R., "Tailoring Wing Structures for Reduced Drag Penalty in Off-Design Flight Conditions," 10th AIAA/ISSMO Multidisciplinary Analysis and Optimization Conference, 30 August - 1 September 2004, Albany, NY, paper AIAA-2004-4637.

83. Shyy, W., Haftka, R.T., Vaidyanathan, R., Goel, T. (2004), **"**Large Scale Computation-Facilitated Design Optimization for Propulsion Components," *40th AIAA/ASME/SAE/ASEE Joint Propulsion Conference and Exhibit (JPC-2004)*,11-14 July. (Ft. Lauderdale, FL.)

84. Vaidyanathan, R., Goel, T., Shyy, W., Queipo, N. V., Haftka, R. T., and Tucker, K. P. "Design of Rocket Injector Using Response Surfaces and Genetic Algorithm," 40th AIAA/ASME/SAE/ASEE Joint Propulsion Conference and Exhibit, July 11-14, 2004. Ft. Lauderdale, FL

85. Vaidyanathan, R., Goel, T., Shyy, W., Queipo, N. V., Haftka, R. T., and Tucker, K. P. "Global sensitivity and trade-off analyses for multi-objective liquid rocket injector design," 40th AIAA/ASME/SAE/ASEE Joint Propulsion Conference and Exhibit, July 11-14, 2004. Ft. Lauderdale, FL

86. Johnson, T. F., Waters, W. A., Singer, T. N., and Haftka, R. T., "Thermal-Structural Optimization of Integrated Cryogenic Propellant Tank Concepts for a Reusable Launch Vehicle," 45th AIAA/ASME/ASCE/-AHS/ASC Structures, Structural Dynamics, and Materials Conference, Palm Springs, CA, April 2004 - paper AIAA-2004-1931.

87. Kale, A., A., Acar, E., Haftka, R., T., Stroud, J., "Why are Airplanes so Safe Structurally? Effect of Various Safety Measures on Structural Safety of Aircraft," 45th AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics, and Materials Conference, Palm Springs, CA, April 2004 – paper AIAA-2004-1629.

88. Grosset, L., Le Riche, R., and Haftka, R.T., "A Double-Distribution Statistical Algorithm for Composite Laminate Optimization," 45th AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics & Materials Conference, Palm Springs, CA, April 2004 - paper AIAA-2004-1910.

89. Qu, X., Singer, T., and Haftka, R.T., "Reliability-Based Global Optimization of Sitffened Panels Using Probabilistic Sufficiency Factor," 45th AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics, and Materials Conference, Palm Springs, CA, April 2004 - paper AIAA-2004-1898.

90. Ramu, P., Qu, X., Youn, B.D., Haftka, R.T., Choi, K.K., "Safety Factor and Inverse Reliability Measures," 45th AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics, and Materials Conference, Palm Springs, CA, April 2004 - paper AIAA-2004-1670.

91. Schutte, J.F., Haftka, R.T., and Watson, L.T., "Decomposition and Two-level Optimization of Structures with Discrete Sizing Variables," 45th AIAA/ASME/ASCE?AHS/ASC Structures, Structural Dynamics, and Materials Conference, Palm Springs, CA, April 2004 – paper AIAA-2004-1541.

92. Vaidyanathan, R., Shyy, W., Garbey, M., and Haftka, R. T., "CFD Code Verification Using Least Square Extrapolation Method," 42nd AIAA Aerospace Sciences Meeting and Exhibit, Jan. 4-8, 2004, Reno, NV, Paper No. AIAA-2004-0739.

93. Ko, A., Leifsson, L.T., Mason, W.H., Schetz, J.A., Grossman, B., and Haftka, R.T., "MDO of a Blended-Wing-Body Transport Aircraft with Distributed Propulsion," AIAA-2003-6732, AIAA's 3rd Annual Aviation Technology, Integration, and Operations (ATIO) Technical Forum Denver, Colorado, 17 - 19 Nov 2003.

94. Grosset, L., Le Riche, R., and Haftka, R.T., "A Study of the Effects of Dimensionality on Stochastic Hill Climbers and Estimation of Distribution Algorithms," Proceedings of the 6th International Conference on Artificial Evolution, October 27-30, 2003, Marseille, France.

95. Schutte, J.F., Groenwold, A.A., and Haftka, R.T., "Optimization of arbitrary curved orthotropic shell structures using parallel swarm intelligence," Proceedings of the American Society for Composites 18th Technical Conference, Gainesville, FL, October 19-13, 2003, paper No. 200.

96. Grosset, L., Le Riche, R., and Haftka, R.T., "A comparison of an estimation of distribution algorithm and a stochastic hill-climber for composite optimization problems," Proceedings of the American Society for Composites 18th Technical Conference, Gainesville, FL, October 19-13, 2003, paper No. 168.

97. Kale, A.A., Haftka, R.T., and Sankar B.V., "Fatigue Reliability and Damage Tolerance Evaluation of Composite Structures," Proceedings of the American Society for Composites 18th Technical Conference, Gainesville, FL, October 19-13, 2003, paper No. 256.

98. Huang, J. and Haftka, R.T., "Optimization of Fiber Orientation near a Hole for Increased Strength ofComposite Laminates," Proceedings of the American Society for Composites 18th Technical Conference, Gainesville, FL, October 19-13, 2003, paper No. 145.

99. Singer*, T., Qu*, X., and Haftka, R.T., "Global Optimization of a Composite Tank Structure Using the DIRECT Algorithm," Proceedings of the American Society for Composites 18th Technical Conference, Gainesville, FL, October 19-13, 2003, paper No. 249.

100. Qu, X., Venkataraman, S., and Haftka, R.T., "Reliability-Based Design Of Cable Stiffened Composite Hydrogen Tank Using Response Surface Approximation," The Fourth International Symposium on Uncertainty Modeling and Analysis, University of Maryland, College Park, Maryland, September 21-24, 2003.

101. Qu, X and Haftka, R.T., "Reliability-Based Design Optimization Of Stiffened Panels," The Fourth International Symposium on Uncertainty Modeling and Analysis, University of Maryland, College Park, Maryland, September 21-24, 2003.

102. Qu, X and Haftka, R.T., "Design Under Uncertainty Using Monte Carlo Simulation And Probabilistic Sufficiency Factor," ASME 2003 Design Engineering Technical Conferences and Computers and Information in Engineering Conference, Chicago, Illinois, USA, September 2-6, 2003.

103. Schutte, J.F., Koh, B.I., Reinbolt, A., Haftka, R.T., George, A.D., Fregly, B.J., "Scale-Independent Biomechanical Optimization," 2003 Summer Bioengineering Conference, June 25-29, 2003, Key Biscayne, Florida.

104. Huang, J., Haftka, R.T., Gartia, B*, and Rapoff, A.J., "Understanding the Role of Osteons in Arresting Cracks in Cortical Bones," 2003 Summer Bioengineering Conference, June 25-29, 2003, Key Biscayne, Florida.

105. A, Reinbolt, J.F. Schutte, R.T. Haftka, A.D. George, K.H. Mitchell, B.J. Fregly, "Determination of Patient-Specific Functional Axes Through Two-Level Optimization," 2003 Summer Bioengineering Conference, June25-29, 2003, Key Biscayne, Florida.

106. Venter, G., Haftka, R.T., and Sobieski, J.S., "Robust Design Using Particle Swarm and Genetic Algorithm Optimization," 5th World Congress of Structural and Multidisciplinary Optimization, Lido di Jesolo, Italy, May 19-23, 2003.

107. Schutte, J., Fregly, B.J., and Haftka, R.T., "A Parallel Particle Swarm Optimizer," 5th World Congress of Structural and Multidisciplinary Optimization, Lido di Jesolo, Italy, May 19-23, 2003

108. Vervenne, K., Haftka, R.T., and Van Keulen, A., "Response Surface Method Applied to Practical Response Functions in Structural Optimization," 5th World Congress of Structural and Multidisciplinary Optimization, Lido di Jesolo, Italy, May 19-23, 2003.

109. Qu, X., Haftka, R.T., and Venter, G., "New Formulation of a Minimum-Bias Experimental Design Based on Gauss Quadrature," 5th World Congress of Structural and Multidisciplinary Optimization, Lido di Jesolo, Italy, May 19-23, 2003.

110. Liu, B., Haftka, R.T., and Watson, L.T., "Global Local Structural Optimization Using Response Surfaces of Local Optimization Margins," 5th World Congress of Structural and Multidisciplinary Optimization, Lido di Jesolo, Italy, May 19-23, 2003.

111. Qu, X., and Haftka, R.T., "Reliability-based Design Optimization Using Probabilistic Safety Factor," 44th AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics, and Materials Conference, Norfolk, VA, April 2003 - paperAIAA-2003-1657.

112. Ifju, P.G., Haftka, R.T., Myers, D., Schulz, W., and Singer, "Statistics Properties and Reliability Based Optimization of Laminates for Cryogenic Environments," 44th AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics, and Materials Conference, Norfolk, VA, April 2003 - paperAIAA-2003-1935.

113. Kale, A. A.,Haftka, R.T., Papila, M., and Sankar, B.V., "Tradeoffs of Weight and Inspection Cost in Fail-Safe Design," 44th AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics, and Materials Conference, Norfolk, VA, April 2003 - paper AIAA-2003-1501.

114. Zhu, H., Sankar, B.V., Haftka, R.T., and Venkataraman, S., "Optimization of a Functionally Graded Metallic Foam Insulation Under Transient Heat Transfer Conditions," 44th AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics, and Materials Conference, Norfolk, VA, April 2003 - paper AIAA-2003-1531.

115. Qu, X., and Haftka, R.T., "Reliability-Based Design Optimization Using a Probabilistic Safety Factor," 44th AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics, and Materials Conference, Norfolk, VA, April 2003 - paper AIAA-2003-1657.

116. Huang, J., Rapoff, A.J., and Haftka, R.T. , "Arresting Cracks in Bone-Like Composites," 44th AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics, and Materials Conference, Norfolk, VA, April 2003 - paper AIAA-2003-1440.

117. Huang, J., Haftka, R.T. and Rapoff, A.J., "Optimization Design of Composite Plates with Holes for Increased Strength," 44th AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics, and Materials Conference, Norfolk, VA, April 2003 - paper AIAA-2003-1549.

118. Sulaeman, E., Kapania, R.,and Haftka,R.T., "Effect of Compressive Force on Flutter of a Strut-Braced Wing," 44th AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics, and Materials Conference, Norfolk, VA, April 2003 - paper AIAA-2003-1943.

119. Papila, M., Haftka, R. T., Nishida, T. and Sheplak, M., "Piezoresistive microphone design Pareto optimization: tradeoff between sensitivity and noise floor," 44th AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics, and Materials Conference, Norfolk, VA, April 2003 - paper AIAA-2003-1632.

120. Lian, Y., Shyy, W. and Haftka, R.T., "Shape Optimization of a Membrane Wing for Micro Air Vehicles," AIAA 41st Aerospace Sciences Meeting & Exhibit, Paper No. 2003-0106, (2003).

121. Qu, X., Venkataraman, S., and Haftka, R.T., "Reliability-based Design of Cable

122. Papila, M., and Haftka, R.T., "Worst Case Bias Error Estimates for Response Surface Approximations," 3rd ISSMO/AIAA Internet Conference on Approximations in Optimization, www-tm.wbmt.tudelft.nl/~wbtmavk/3rd_approx_web_conf. Oct. 14-25, 2002.

123. Liu, B., Haftka, R.T., and Watson, L.T., "Global-Local Structural Optimization Using Response Surfaces of Local Optimization Margins," 3rd ISSMO/AIAA Internet Conference on Approximations in Optimization, www-tm.wbmt.tudelft.nl/~wbtmavk/3rd_approx_web_conf. Oct. 14-25, 2002.

124. Qu, X. and Haftka, R.T., "Probabilistic Safety Factor Based Response Surface Approach for Reliability-based Design Optimization," 3rd ISSMO/AIAA Internet Conference on Approximations in Optimization, www-tm.wbmt.tudelft.nl/~wbtmavk/3rd_approx_web_conf. Oct. 14-25, 2002.

125. Cox, S.E., Haftka, R.T., Hart, W., and Watson, L.T., "DIRECT Algorithm with Box Penetration for Improved Local Convergence," AIAA Paper 2002-5581, Proceedings 9th AIAA/ISSMO Symposium on Multidisciplinary Analysis and Optimization, Atlanta, Ga, Sept. 4-6, 2002.

126. Kim, H., Papila, M., Haftka, R.T., Mason, W.H., Watson, L.T., and Grossman, B., "Estimating Optimization Error Statistics via Optimization Runs from Multiple Starting Points," AIAA Paper 2002-5576, Proceedings 9th AIAA/ISSMO Symposium on Multidisciplinary Analysis and Optimization, Atlanta, Ga, Sept. 4-6, 2002.

127. Hosder, S., Grossman, B., Watson, L.T., Mason, W.H., and Haftka, R.T., "Observations on CFD Simulation Uncertainties," AIAA Paper 2002-5531, Proceedings 9th AIAA/ISSMO Symposium on Multidisciplinary Analysis and Optimization, Atlanta, Ga, Sept. 4-6, 2002.

128. Grosset L., Le Riche, R., and Haftka, R.T., "Statistical Optimization of Composite Laminates: Introduction of Coupling via a Change of Variables," AIAA Paper 2002-5462, Proceedings 9th AIAA/ISSMO Symposium on Multidisciplinary Analysis and Optimization, Atlanta, Ga, Sept. 4-6, 2002.

129. Romero, V., Qu, X., and Haftka, R.T., "Development of Method Costing Software for Uncertainty Propagation Decision Analysis," AIAA Paper 2002-1463, Proceedings 43nd AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics and Material Conference, Denver, CO, April, 2002.

130. Kale, A.A.., Papila, M., and Haftka, R.T., "Simultaneous Design Optimization of Aircraft Structures and Inspection Periods," AIAA Paper 2002-1402, Proceedings 43nd AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics and Material Conference, Denver, CO, April, 2002.

131. Haftka, R.T., and Venkataraman, S., "Structural Optimization: What has Moore's Law Done for Us?" AIAA Paper 2002-1342, Proceedings 43nd AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics and Material Conference, Denver, CO, April, 2002.

132. Grosset, L., Venkataraman, S., and Haftka, R.T., "Probability-based genetic algorithm for composite laminate optimization," AIAA Paper 2002-1673, Proceedings 43nd AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics and Material Conference, Denver, CO, April, 2002.

133. Sulaeman, E., Kapania, R.K., and Haftka, R.T., "Parametric Studies of Flutter Speed in a Strut-Braced Wing," AIAA Paper 2002-1487, Proceedings 43nd AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics and Material Conference, Denver, CO, April, 2002.

134. Huang, J., Venkataraman, S., Rapoff, A.J.,, and Haftka, R.T., "Optimization Design of Inhomegeneous isotropic Plates with Holes by Mimicking Bones," AIAA Paper 2002-1236, Proceedings 43nd AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics and Material Conference, Denver, CO, April, 2002.

135. Zhu , H., Sankar, B.V., Haftka, R.T., Venkataraman, S., and Blosser, M., "Minimum Mass Design of Insulation Made of Functionally Graded Material," AIAA Paper 2002-1425, Proceedings 43nd AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics and Material Conference, Denver, CO, April, 2002.

136. Kim, H., Mason, W.H., Watson, L.T., Grossman, B., Papila, M., Haftka, R.T., "Protection Against Modeling and Uncertainties in Design Optimization," in *Modeling and Simulation-Based Life Cycle Engineering,* eds.: K. Chung, S.Saigal, S. Thynell and H. Morgan, Spon Press, London and New York, 2002, pp. 231-246.

137. Hongman Kim, William H. Mason, Layne T. Watson, Bernard Grossman and Raphael T. Haftka "Probabilistic Modeling of Optimization Errors," Proceedings CD of 2002 National Science Foundation Design, Service and Manufacturing Grantees and Research Conference, San Juan, PR, January 7-10, 2002.

138. Papila, M., Papila, N., Shyy, W., Haftka, R. T. and Fitz-Coy, N., "Error-based Design Space Windowing," 40th AIAA Aerospace Sciences Meeting & Exhibit, January 2002 - paper AIAA-2002-0539.

139. Grosset, L., Venkataraman, S., and Haftka, R.T., "Genetic optimization of two-material composite laminates," Proceedings, 16th ASC Technical Meeting, Blacksburg, VA, September 2001.

140. Venkataraman, S., Zhu, H., Sankar B.V., Haftka, R.T., and Blosser, M., "Optimum Design of a Functionally Graded Metallic Foam Thermal Insulation," Proceedings, 16th ASC Technical Meeting, Blacksburg, VA, September 2001.

141. Lauridsen, S., Vitali, R., Keulen, F.V., Madsen, J.I., and Haftka, R.T., "Response Surface Approximation using Gradient Information," Proceedings 4rd World Congress of Structural and Multidisciplinary Optimization, Dalian China, June 4-8, 2001.

142. Liu, B., and Haftka, R.T., "Maximization of Continuity of Complex Composite Structures by Permutation Genetic Algorithms," Proceedings 4rd World Congress of Structural and Multidisciplinary Optimization, Dalian China, June 4-8, 2001.

143. Qu, X., Venkatarman, S., and Haftka, R.T., "Reliability-based Composite Panel Design for Cryogenic Environments Using Response Surface Approximation," Proceedings 4rd World Congress of Structural and Multidisciplinary Optimization, Dalian China, June 4-8, 2001.

144. Venkataraman, S., Haftka, R.T., and Rapoff, A.J., "Strength Optimization of a Plate with Hole Using Biologically Inspired Design Variables," Proceedings 4rd World Congress of Structural and Multidisciplinary Optimization, Dalian China, June 4-8, 2001.

145. Papila, M., and Haftka, R.T., "Uncertainty and Response Surface Approximations," AIAA Paper 2001-1680, Proceedings 42nd AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics and Material Conference, Seattle, WA, April, 2001.

146. Sulaeman, E., Kapania, R.K., and Haftka, R.T., "Effect of Compressive Force on Strut-Braced Wing Response," AIAA Paper 2001-1611, Proceedings 42nd AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics and Material Conference, Seattle, WA, April, 2001.

147. Liu, B. and Haftka, R.T., "Composite Wing Structural Design Optimization with Continuity Constraints," AIAA Paper 2001-1205, Proceedings 42nd AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics and Material Conference, Seattle, WA, April, 2001.

148. Qu, X., Venkataraman, S., Haftka, R.T., and Johnson, T.F., "Reliability, Weight, and Cost Tradeoffs in the Design of Composite Laminates for Cryogenic Environments," AIAA Paper 2001-1327, Proceedings 42nd AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics and Material Conference, Seattle, WA, April, 2001.

149. Akgün, M.A. and Haftka, R.T., "Damage Tolerant Topology Optimization Under Multiple Damage Configurations," Topology Optimization of Structures and Composite Continua, G.I.N. Rozvany and N. Olhoff (eds.), 317-325, Kluwer Academic Publishers, 2000.

150. Vaidyanathan, R., Papila, N., Shyy, W., Tucker, P.,K., Griffin, L. W., Haftka, R.T., and Fitz-Coy, N., "Neural Network and Response Surface Methodology for Rocket Engine Component Optimization," AIAA Paper 2000-4880, Proceedings, AIAA/USAF/NASA/ISSMO Symposium on Multidisciplinary Analysis and Optimization, Long Beach California, September 6-8, 2000.

151. Kim, H., Haftka, R.T., Mason, W.H., Watson, L.T., and Grossman, B., "A Study of the Statistical Description of Errors from Structural Optimization," AIAA Paper 2000-4840, Proceedings, AIAA/USAF/NASA/ISSMO Symposium on Multidisciplinary Analysis and Optimization, Long Beach California, September 6-8, 2000.

152. Gern, F.H., Ko, A., Sulaeman, E., Kapania, R.K., Mason, W.H., Grossman, B., and Haftka, R.T., "Passive Load Alleviation in the Design of a Truss-Braced-Wing Transonic Transport Aircraft," AIAA Paper 2000-4826, Proceedings, AIAA/USAF/NASA/ISSMO Symposium on Multidisciplinary Analysis and Optimization, Long Beach California, September 6-8, 2000.

153. Baker, C.A., Watson, L.T., Grossman, B., Haftka, R.T., and Mason, W.H., "Study of a Global Design Space Exploration Method for Aerospace Vehicles," AIAA Paper 2000-4763, Proceedings, AIAA/USAF/-NASA/ISSMO Symposium on Multidisciplinary Analysis and Optimization, Long Beach California, September 6-8, 2000.

154. Qu, X., Venkataraman, S., Haftka, R.T., and Johnson, T.F., "Deterministic and Reliability-Based Optimization of Composite Laminates for Cryogenic Environments," AIAA Paper 2000-4760, Proceedings, AIAA/USAF/NASA/ISSMO Symposium on Multidisciplinary Analysis and Optimization, Long Beach California, September 6-8, 2000.

155. Papila, M., and Haftka, R.T., "Response Surfaces for Optimal Weight of Cracked Composite Panels: Noise and Accuracy," AIAA Paper 2000-4755, Proceedings, AIAA/USAF/NASA/ISSMO Symposium on Multidisciplinary Analysis and Optimization, Long Beach California, September 6-8, 2000.

156. Venkataraman, S. and Haftka, R.T., "Response Surfaces for Predicting Load Redistribution in Multi-level Structural Optimizations," International Congress of Theoretical and Applied Mechanics, Chicago, Illinois, Aug 27-Sep 2, 2000.

157. Qu, X., Venkataraman, S., and Haftka, R.T., "Response Surface Options for Probabilistic Optimization of Stiffened Panels," Proceedings, Joint Specialty Conference on Probabilistic Mechanics and Structural Reliability, Notre Dame, Indiana, 24-26, July 2000.

158. Akgün, M.A., and Haftka, R.T., "Damage Tolerant Topology Optimization under Multiple Damage Configurations," in Topology Optimization of Structures and Composite Continua (G.I.N Rozvany and N. Olhoff, editors), Proceedings of NATO ARW, pp. 317-325, Budapest, Hungary May 8-12, 2000, pp. 317-325, Kluwer Academic Publishers, the Netherlands.

159. Baker, C. A., Watson, L. T., Grossman, B., Haftka, R. T., and Mason, W. H., "Parallel global aircraft configuration design space exploration," Proc. High Performance Computing Symposium 2000, A. Tentner (Ed.), Soc. for Computer Simulation Internat., San Diego, CA, 2000, pp. 101-106.

160. Kim, H., Papila, M., Mason, W.H., Watson, L.T., and Haftka, R.T., "Detection and Correction of Poorly Converged Optimizations by iteratively reweighed least squares," Proceedings 41st AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics, and Materials Conference, Atlanta, GA, Apr. 3-6, 2000.

161. Akgun, M.A., and Haftka, R.T., "Damage Tolerant Topology Optimization under multiple load cases," Proceedings 41st AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics, and Materials Conference, Atlanta, GA, Apr. 3-6, 2000.

162. Petrov, E.P., Vitali, R., and Haftka, R.T., "Optimization of mistuned bladed discs using gradient-based response surface approximations," Proceedings, 41st AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics, and Materials Conference, Atlanta, GA, Apr. 6-8, 2000.

163. Rosca, R. , Haftka, R.T., Nikolaidis, E., Akgün, M.A., "Block Toppling Model for Testing Procedures for Design against Uncertainty," AIAA Paper 2000-1717, Proceedings, 41st AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics, and Materials Conference, Atlanta, GA, Apr. 6-8, 2000.

164. Lamberti, L., Venkataman, S. and Haftka, R.T., "Comparison of Preliminary Designs of Stiffened Panels Optimized Using PANDA2 for Reusable Launch Vehicle Tanks," AIAA Paper 2000-1657, Proceedings, 41st AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics, and Materials Conference, Atlanta, GA,Apr. 6-8, 2000.

165. Van Keulen, F., Liu, B., and Haftka, R.T., "Noise and Discontinuity Issues in Response Surfaces Based on Functions and Derivatives," Proceedings, 41th AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics, and Materials Conference, Atlanta, Georgia, April 3-6, 2000. AIAA Paper 2000-1363.

166. Van Keulen, A.,Haftka, R.T., and Qu, X., "Review of Options for Structural Sensitivity Calculations," AIAA Paper 2000-1351, AIAA Paper 2000-1327, Proceedings, 41st AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics and Materials Conference, Atlanta, GA, April 3-6, 2000.

167. Gern, F.H., Naghshineh-Pour, A.H., Sulaeman, E., Kapania, R.K., and Haftka, R.T., "Flexible Wing Model for Structural Wing Sizing and Multidisciplinary Design Optimization of a Truss-Braced Wing," AIAA Paper 2000-1327, Proceedings, 41st AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics and Materials Conference, Atlanta, GA, April 3-6, 2000.

168. Gundlach, J.F., Tétrault, P-A., Gern, F., Nagshineh-Pour, A., Ko, A., Schetz, J.A., Mason, W.H., Kapania, R., Grossman, B., and Haftka, R.T., "Multidisciplinary Design Optimization of a Strut-Braced Wing Transonic Transport," AIAA Paper 2000-0420, 38th Aerospace Sciences Meeting & Exhibit, 10-13, January, 2000, Reno, Nevada.

169. Ko, A., Grossman, B., Mason, W.H., and Haftka, R.T., "The Role of Constraints in the MDO of a Cantilever and Strut-Braced Wing Transonic," AIAA Paper 2000-5609, 2000 World Aviation Conference, October 10-12, 2000, San Diego, CA.

170. Sloan, J.G., Shyy, W., and Haftka, R.T., "Airfoil and Wing Planform Optimization for Micro Air Vehicles," Proceedings, Symposium of the RTO Applied Vehicle Technology Panel, Ottawa, Canada, October 19-21, 1999.

171. Gern, F.H., Gundlach, J., Ko, A., Naghshineh-Pour, A., Tetrault, P., Sulaeman, E., Grossman, B., Haftka, R.T., Kapania, R. K., Mason, W.H., and Schetz, J. A., "Multidisciplinary Design Optimization of a Transonic Commercial Transport with a Strut-Braced Wing," *World Aviation Congress*, San Francisco, CA, October 19-21, 1999.

172. Nikolaidis, E., Chen, S., Cudney, H.H., Rosca, R., and Haftka. R.T., "Comparison of probabilistic and possibility theory-based methods for design against catastrophic failure under uncertainty," ASME International Conference on Design Theory and Methodology, 11th, Las Vegas, NE,Sept. 12-16, 1999.

173. Liu, B., Haftka, R.T., and Akgün, M. A, "Two-Level Composite Wing Structural Optimization Using Response Surfaces," Proceeding of First ASMO UK / ISSMO conference on Engineering Design Optimization, Ilkley, West Yorkshire, UK, July 8-9, 1999, pp. 19-27.

174. Papila, N., Shyy, W., Fitz-Coy, N., and Haftka, R.T., "Assessment of Neural Net and Polynomial-Based Techniques for Aerodynamic Applications," AIAA Paper 99-3167, Presented at the 17th Applied Aerodynamics Conference, Norfolk, VA, June 28-July 1, 1999.

175. Cox, S.E., Haftka, R.T., Baker, C.A., Grossman, B., Mason, W.H., Watson, L.T., "Global Multidisciplinary Optimization of a High Speed Civil Transport," Proceedings of Aerospace Numerical Simulation Symposium '99, Tokyo, Japan, 1999, pp. 23-28.

176. Vitali, R., Haftka, R.T., and Sankar, B.V., "Multifidelity Design of Stiffened Composite Panel with a Crack," World Congress of Structural and Multidisciplinary Optimization, Buffalo, New York, May 17-21, 1999.

177. Venter, G., and Haftka, R.T., "Two Species Genetic Algorithm for Design under Worst Case Conditions," World Congress of Structural and Multidisciplinary Optimization, Buffalo, New York, May 17-21, 1999.

178. Cox, S.E., Haftka, R.T., Baker, C.A., Grossman, B., Mason, W.H., and Watson, L.T, "Global Optimization of a High Speed Civil Transport Configuration," Proceedings, 3rd World Congress of Structural and Multidisciplinary Optimization, Buffalo, New York, May 17-21, 1999.

179. Liu, B., Haftka, R.T., and Akgün, M. A, "Composite Wing Structural Optimization By Genetic Algorithms, Response Surfaces, and Rounding," Proceeding of 3rd World Congress of Structural and Multidisciplinary Optimization, Buffalo, New York, May 17-21, 1999, pp. 266-268.

180. Vitali, R., Haftka, R.T., and Sankar B.V., "Correction Response Surface Design of Stiffened Composite Panel with a Crack," AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics and Material Conference Paper AIAA-99-2231, St. Louis, Missouri, April 12-15, 1999.

181. Kajiwara, I. and Haftka, R.T., "Simultaneous Design of Shape and Control System for Micro Air Vehicles," AIAA Paper 99-1391, Proceedings, AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics and Material Conference, pp. 1612-1621, St. Louis, Missouri, April 12-15, 1999.

182. Akgün, M.A., Haftka, R.T., Wu, K.C., and Walsh, J.L., "Sensitivity of Lumped Constraints using the Adjoint Method," AIAA Paper 99-1314, Proceedings, AIAA/ASME/-ASCE/AHS/ASC Structures, Structural Dynamics and Material Conference, pp. 1003-1013, St. Louis, Missouri, April 12-15, 1999.

183. Papila, M., and Haftka, R.T., "Uncertainty and Wing Structural Weight Approximations," AIAA Paper 99-1312, Proceedings, AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics and Material Conference, pp. 988-1002, St. Louis, Missouri, April 12-15, 1999.

184. Venkataraman, S., Haftka, R.T., "Optimization of Composite Panels - a review," Proceedings of the American Society of Composites- 14th Annual Technical Conference, Fairborn, Ohio, pp. 479-488, 1999.

185. Chen, S., Nikolaidis, E., Cudney, H.H., Rosca, R., and Haftka. R.T., "Comparison of Probabilistic and Fuzzy-Set-based Methods for Designing under Uncertainty," AIAA Paper 99-1579, Proceedings, AIAA/ASME-ASCE/AHS/ASC Structures, Structural Dynamics and Material Conference, pp. 2860-2874, St. Louis, Missouri, April 12-15, 1999.

186. Krasteva, D.T., Baker, C., Watson, L. T., Grossman, B., Mason, W. H., and Haftka, R.T., "Distributed control parallelism for multidisciplinary design of a high speed civil transport," in *Proc. 7th Symp. on the Frontiers of Massively Parallel Computation*, IEEE Computer Soc., Los Alamitos, CA, 1999, 166-173.

187. Venkataraman, S., and Haftka, R. T., "Design of Shell Structures for Buckling using Correction Response Surface Approximations," AIAA-98-4855, 7th AIAA/USAF/NASA/-ISSMO Symposium on Multidisciplinary Analysis and Optimization, St. Louis, MO, Sep. 2-4 1998, Vol. 2, pp. 1131-1144.

188. Venter, G., and Haftka R.T., "Response Surface Approximations for Cost Optimization of Dropped Ply Composite Laminates with Uncertainty," AIAA Paper No. 98-4856, Proceedings, 7th AIAA/USAF/NASA/ISSMO Symposium on Multidisciplinary Analysis and Optimization, pp. 1145-1163, St. Louis, Missouri, September 2-4, 1998.

189. Siorek, T., and Haftka, R.T., "Paper Helicopter – Experimental Optimum Engineering Design Classroom Problem," AIAA Paper 98-4963 Proceedings, 7th AIAA/USAF/NASA/-ISSMO Symposium on Multidisciplinary Analysis and Optimization, pp. 2013-2020, St. Louis MO, Sept. 2-4, 1998.

190. Liu, B., Haftka, R.T., and Akgün, M.A., "Composite Wing Structural Optimization using Genetic Algorithms and Response Surfaces," AIAA Paper 98-4854, 7th AIAA/USAF/-NASA/ISSMO Symposium on Multidisciplinary Analysis and Optimization, St. Louis MO, Sept. 2-4, 1998.

191. Todoroki, A., and Haftka, R.T. , "Lamination Parameters for Efficient Genetic Optimization of the Stacking Sequences of Composite Panels," AIAA Paper 98-4817, Proceedings, 7th AIAA/USAF/NASA/ISSMO Symposium on Multidisciplinary Analysis and Optimization, pp. 870-879, St. Louis MO, Sept. 2-4, 1998.

192. Balabanov, V.O., Haftka, R.T., Grossman, B., Mason, W.H., and Watson, L.T., "Multidisciplinary Response Surface Model for HSCT Wing Bending Material Weight," AIAA Paper 98-4804, Proceedings, 7th AIAA/USAF/NASA/ISSMO Symposium on Multidisciplinary Analysis and Optimization, pp. 778-788, St. Louis MO, Sept. 2-4, 1998.

193. Baker, C.A., Grossman, B., Haftka, R.T., Mason, W.H., and Watson, L.T., "HSCT Configuration Design Space Exploration using Aerodynamic Response Surface Approximations," AIAA Paper 98-4803, Proceedings, 7th AIAA/USAF/NASA/ISSMO Symposium on Multidisciplinary Analysis and Optimization, pp. 769-777, St. Louis MO, Sept. 2-4, 1998.

194. Haftka, R.T., "Genetic Algorithms for Optimization of Composite Laminates," NATO Advanced Study Institute, July 1998, in Mechanics of Composite Materials and Structures, (A. Mota Soares et al. eds), Kluwer Academic Publishers, pp. 431-441, 1999.

195. Haftka, R.T., Vitali, R., and Sankar, B.V., "Optimization of Composite Structures using Response Surface Approximations," NATO Advanced Study Institute, July 1998, in Mechanics of Composite Materials and Structures, (A. Mota Soares et al. eds), Kluwer Academic Publishers, pp. 409-430, 1999.

196. Akgün, M. A., Haftka, R.T. and Garcelon, J.H., "Fast Exact Static Structural Reanalysis in Relation to the Sherman-Morrison-Woodbury Equation," ISSMO/NASA/AIAA First Internet Conference on Approximation and Fast Reanalysis Techniques in Engineering Optimization June 14-27, 1998.

197. Mason, W.H., Knill, D.L., Giunta, A.A., Grossman, B., Haftka, R.T., and Watson, L.T., "Getting the Full Benefits of CFD in Conceptual Design," AIAA 16th Applied Aerodynamics Conference, Paper No. 98-2513, Albuquerque, NM., June 1998.

198. Park, O., Sankar, B.V., and Haftka, R.T., "Analytical Model for a Stitched Stiffened Panel subject to Axial Compression," presented at the 13th US National Congress of Applied Mechanics, Gainesville, FL, June 1998.

199. Venter, G., and Haftka R.T., "Response Surface Approximations for Designing Dropped-Ply Composite Laminates with Uncertainty," Book of Abstracts of the 13th United States National Congress of Applied Mechanics, Gainesville, Florida, June 21 - 26, 1998, p. RA5.

200. Papila, M., Sugavanam, S., and Haftka, R.T., "Scale Effects on Aircraft Structural Weight," AeMES-TR-97-3-01, University of Florida, Oct.1997, presented at the 13th US National Congress of Applied Mechanics, Gainesville, FL, June 1998.

201. Park, O., Haftka, R.T., Nagendra, S.N., and Sankar, B.V., "Analytical and experimental study of a blade stiffened panel in axial compression," AIAA Paper 98-1993, presented at the 39th AIAA/ASME/ASCEAHS-/ASC Structures, Structural Dynamics, and Materials Conference, Long Beach, California, April 22 - 23, 1998.

202. Akgün, M. A., Haftka, R.T. and Garcelon, J.H., "Sensitivity of Stress Constraints using the Adjoint Method," AIAA Paper 98-1752,Proc. 39th AIAA/ASME/ASCE/AHS/ASC, Structures, Structural Dynamics, and Materials Conference, Long Beach, California, April 20-23, 1998, Vol. 1, pp.441-448.

203. Venter, G., and Haftka R.T., "Using Response Surface Methodology in Fuzzy Set Based Design Optimization," AIAA Paper 98-1776, Proc. 39th AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics, and Materials Conference, Long Beach, California, April 22 - 23, 1998, Vol. 1, pp. 641-652.

204. Liu, B., Haftka, R.T., and Akgun, M.A., "Permutation Genetic Algorithm For Stacking Sequence Optimization," AIAA Paper 98-1830,Proc. 39th AIAA/ASME/ASCE/AHS/ASC, Structures, Structural Dynamics, and Materials Conference, Long Beach, California, April 20-23, 1998, Vol. 2, pp.1141-1152.

205. Vitali, R, Haftka, R.T., and Sankar, B. V., "Response Surface Approximations for Crack Propagation Critical Loads," AIAA Paper 98-2047, Proceedings, 39th AIAA/ASME/ASCE/-AHS/ASC Structures, Structural Dynamics, and Materials Conference, Long Beach, California, April 20 - 23, 1998, Vol. 4., pp. 2917-2922

206. McMahon, M.T., Watson, L.T. , Soremekun, G.A., Gürdal, Z., and Haftka, R.T., "A Fortran 90 Genetic Algorithm Module for Design of Composite Laminate Structure," in Structural Optimisation, Proccedings, Australian Conference on Structural Optimisation, Sidney, Australia, Feb. 11-13 , G. P. Steven, O. M. Querin, H. Guan, and Y. M. Xie (Eds.), Oxbridge, Victoria, Australia, pp. 95-102.

207. Knill, D.L. , Giunta, A.,A., Baker, C.A., Grossman, B., Mason, W.H., Haftka, R.T., and Watson, L.T., "HSCT Configuration Design Using Response Surface Approximations of Supersonic Euler Aerodynamics," AIAA Paper 98-0905, 36th Aerospace Sciences Meeting & Exhibit, Reno, NV, January 12-15, 1998.

208. Venkataraman, S., Haftka, R.T., and Johnson, T. F., "Use of Effective Engineering Constants for Composite Laminates Optimized for Buckling Loads," Proceedings of the American Society of Composites: Twelfth Annual Technical Conference, Dearborn, MI, Oct. 6 -8, 1997, pp. 12-22.

209. Madsen, J.I. (*), Shyy, W., Haftka, R.T., and Liu, J., "Response Surface Techniques for Diffuser Shape Optimization," AIAA Paper 97-1801, 28th AIAA Fluid Dynamics Conference, Snowmass, CO, June 29-July 2, 1997.

210. Davidson, R., Foch, R., Haftka, R., and Walsh, E. (*), "University of Florida Micro Air Vehicle Competition Highlights," AUVSI Proceedings, Baltimore, MD, June 3-6, 1997, pp. 627-629.

211. Vitali, R., Park, O., Haftka, R.T., and Sankar, B.V., "Structural Optimization of a Hat Stiffened Panel by Response Surface Techniques," AIAA Paper 97-1151, Proceedings of the 38th AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics and Material Conference, Kissimmee, FL, April 7-10, 1997, Part 4, pp. 2983-2993.

212. Venter, G., Haftka, R.T., and Chirehdast, M., "Response Surface Approximations for Fatigue Life Predictions," AIAA Paper 97-1331, Proceedings of the 38th AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics and Material Conference, Kissimmee, FL, April 7-10, 1997, Part 2, pp. 1383-1396.

213. Venter, G., and Haftka, R.T., "Minimum-Bias based Experimental Design for Constructing Response Surfaces in Structural Optimization," AIAA Paper 97-1053, Proceedings of the 38th AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics and Material Conference, Kissimmee, FL, April 7-10, 1997, Part 2, pp. 1225-1238.

214. Garcelon, J., Haftka, R., and Scotti, S., "Approximation in Optimization and Damage Tolerant Design," AIAA Paper 97-1050, Proceedings of the 38th AIAA/ASME/ASCE-/AHS/ASC Structures, Structural Dynamics and Material Conference, Kissimmee, FL, April 7-10, 1997, Part 2, pp. 1193-1203.

215. Ragon, S.A., Gürdal, Z., Haftka, R.T., and Tzong, T.J., "Global/Local Structural Wing Design Using Response Surface Techniques," AIAA Paper 97-1051, Proceedings of the 38th AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics and Material Conference, Kissimmee, FL, April 7-10, 1997, Part 2, pp. 1204-1214.

216. Todoroki, A., and Haftka, R.T., "Stacking Sequence Matching by Two-Stage Genetic Algorithm with Consaguineous Initial Population," AIAA Paper 97-1228, Proceedings of the 38th AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics and Material Conference, Kissimmee, FL, April 7-10, 1997, Part 2, pp. 1297-1302.

217. Ohta, Y. and Haftka, R.T., "Optimization of FRP Laminated Plates under Uncertainty by Fuzzy-Set and Genetic Algorithm," AIAA Paper 97-1231, Proceedings of the 38th AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics and Material Conference, Kissimmee, FL, April 7-10, 1997, Part 2 , pp. 1325-1330.

218. Venkataraman, S., and Haftka, R. T., "Integration of Finite Element Analysis Program and Panel Design Program," AIAA Paper 97-1052, Proceedings of the 38th AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics and Materials Conference, Kissimmee, FL April 7-10, 1997, pp 1215-1224.

219. Haftka, R.T., Jenkins, D.A., and Walsh, E,K., "ISSMO Micro-AV Competition," Proceedings, 1st International Conference on Emerging Technologies for Micro Air Vehicles, Georgia Institute of Technology, Atlanta, GA, Feb. 19-20, 1997, pp. 132-136.

220. MacMillin, P.E., Golovidov, O., Mason, W.H., Grossman, B., and Haftka, R.T., "An MDO Investigation of the Impact of Practical Constraints on an HSCT Configuration," AIAA Paper 97-0098, 35th AIAA Aerospace Sciences Meeting and Exhibit, Reno, Nevada, January 1997.

221. Giunta, A. A., Golividov, O., Knill, D. L., Grossman, B., Mason, W.H., Watson, L. T. and Haftka, R. T., "Multidisciplinary Design Optimization of Advanced Aircraft Configurations," keynote paper in the Proceedings of the Fifteenth International Conference on Numerical Methods in Fluid Dynamics}, Monterey, CA, June 1996, *Lecture Notes in Physics*, **490**, Eds: P. Kutler, J. Flores, J.-J. Chattot, Springer-Verlag, pp. 14-34.

222. Ohta. Y., and Haftka, R.T., "Optimization of FRP Laminated Plates by Genetic Algorithm with Continuous Design Variables," (in Japanese) Presented at the JSME OPTIS 1996, Kanazawa, Japan, Sept. 12-13, 1996.

223. Roux, W.J., Stander, N., and Haftka, R.T., "Response Surface Approximations for Structural Optimization," AIAA Paper 96-4042, Proceedings 6th AIAA/NASA/USAF/ISSMO Symposium on Multidisciplinary Analysis and Optimization, Bellevue, WA, Sept. 4-6, 1996, pp. 565-578.

224. Chrisfulli, P.J., Kaufman, M., Giunta, A.A., Mason, W.H., Grossman, B., Watson, L.T., and Haftka, R.T., "Response Surface Approximations for Pitching Moment, Including Pitch-Up, in the MDO Design of an HSCT," AIAA Paper 96-4136, Proceedings 6th AIAA/NASA/USAF/ISSMO Symposium on Multidisciplinary Analysis and Optimization, Bellevue, WA, Sept. 4-6, 1996, pp. 1308-1322.

225. Soremekun, G., Gürdal, Z., Haftka, R.T., and Watson, L.T., "Improving Genetic Algorithm Efficiency and Reliability in the Design and Optimization of Composite Structures," AIAA Paper 96-4024, Proceedings 6th AIAA/NASA/USAF/ISSMO Symposium on Multidisciplinary Analysis and Optimization, Bellevue, WA, Sept. 4-6, 1996, pp. 372-383.

226. Balabanov, V., Kaufman, M., Knill, D.L, Haim, D., Golovidov, O., Giunta, A.A., Grossman, B., Mason, W.H., Watson, L.T., and Haftka, R.T., "Dependence of Optimal Structural Weight on Aerodynamic Shape for a High-Speed Civil Transport," AIAA Paper 96-4046, Proceedings 6th AIAA/NASA/USAF/ISSMO Symposium on Multidisciplinary Analysis and Optimization, Bellevue, WA, Sept. 4-6, 1996, pp. 599-612.

227. Venter, G., Haftka, R.T., and Starnes, J.H., Jr., "Construction of Response Surfaces for Design Optimization Applications," AIAA Paper 96-4001, Proceedings, 6th AIAA/NASA/USAF/ISSMO Symposium on Multidisciplinary Analysis and Optimization, Bellevue, WA, Sept. 4-6, 1996, pp. 168-183.

228. Giunta, A.A Balabanov, V., Haim, D., Grossman, B., Mason, W.H., Watson, L.T., and Haftka, R.T., "Wing Design for a High-Speed Civil Transport Using Design of Experiments Methodology," AIAA Paper 96-4001, 6th AIAA/NASA/USAF/ISSMO Symposium on Multidisciplinary Analysis and Optimization, Bellevue, WA, Sept. 4-6, 1996.

229. Haftka, R.T., and Scott, E.P., "Optimization and Experiments - a Survey," paper presented at the IUTAM Symposium, Kyoto, Japan, August 26-31, 1996.

230. Maglaras, G., Nikolaidis, E., Haftka, R.T., and Cudney, H.H., "Analytical-Experimental Comparison of Probabilistic Mehtods and Fuzzy-Set-Based Methods for Designing Under Uncertainty," Proceedings, Uncertainties: Models and Measures Workshop Lambrecht, Germany, July 22-24, 1996.

231. Giunta, A.A., Grossman, B., Mason W.H., Watson, L.T., and Haftka R.T., "Multidisciplinary Optimization of an HSCT Wing Using a Response Surface Methodology," Proceedings,1st Intl. Conf. on Nonlinear Problems in Aviation and Aerospace, Daytona Beach, FL, May 9-11, 1996. Editor: Sivasundaram, S., Embry-Riddle Aeronautical University Press, Daytona Beach, FL, 1996, pp. 209-214.

232. Venter, G., and Haftka R.T., "A Two Species Genetic Algorithm for Designing Composite Laminates Subject to Uncertainty," AIAA Paper 96-1535, 37th AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics and Materials Conference, Salt Lake City, UT, April 15-17, 1996.

233. Magalras, G., Nikolaidis, E., Evink J., Cudney, H.H., and Haftka R.T., "Analytical-Experimental Comparison of Probabilistic Methods and Fuzzy Sets Methods for Designing Under Uncertainty," AIAA

Paper 96-1611, 37th AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics and Materials Conference, Salt Lake City, UT, April 15-17, 1996.

234. Juneja, V., Cudney, H.H., and Haftka, R.T., "Locating Structural Damage in Real Time using Contrast Maximization," AIAA Paper 96-1222, Proceedings of the AIAA Dynamics Specialists Conference, April 18-19, 1996, Salt Lake City, UT, pp. 175-186.

235. Balabanov, V., Kaufman, M., Giunta, A.A., Haftka, R.T., Grossman, B., Mason, W.H., and Watson, L.T., "Developing Customized Wing Weight Function by Structural Optimization on Parallel Computers," AIAA Paper 96-1336, Proceedings of the 37th AIAA/ASME/ASCE/AHS Structures, Structural Dynamics and Material Conference, Salt Lake City, UT, April 15-17, 1996, Part 1, pp. 113-125.

236. Kaufman, M., Balabanov, Grossman, B., Mason, W.H., Watson, L.T., and Haftka, R.T., "Multidisciplinary Optimization via Response Surface Techniques," Proceedings of the 36th Israel Conference on Aerospace Sciences, Israel, February 21-22, 1996, pp. A-57 to A-67.

237. Kaufman, M., Balabanov, V., Burgee, S.L., Giunta, A.A., Grossman, B., Mason, W.H., Watson, L.T., and Haftka, R.T., "Variable-Complexity Response Surface Approximations for Wing Structural Weight in HSCT Design," 34th AIAA Aerospace Sciences Meeting and Exhibit, AIAA Paper No. 96-0089, Reno, Nevada, January 15-18, 1996.

238. Knill, D.L., Grossman, B., Mason, W.H., and Haftka, R.T., "Certification of a CFD Code for High-Speed Civil Transport Design Optimization," 34th AIAA Aerospace Sciences Meeting and Exhibit, AIAA Paper No. 96-0330, Reno, Nevada, January 15-18, 1996.

239. Sobieszczanski-Sobieski , J. and Haftka, R. T., "Multidisciplinary Aerospace Design Optimization: Survey of Recent Developments," 34th AIAA Aerospace Sciences Meeting and Exhibit, AIAA Paper No. 96-0711, Reno, Nevada, January 15-18, 1996.

240. Woodson, M.B., Haftka, R.T., Johnson, E.R., and Carden, H.D., "Optimal Design of Composite Fuselage Frames for Crashworthiness," Proceedings, 6th NASA/DOD/ARPA Advnaced Composites Technology Conference, Annaheim, CA, Aug. 7-11, 1995.

241. Haryadi, S.G., Kapania, R.A., and Haftka, R.T., "Global/Local Analysis of Stepped Plates with Cutouts," in *Computational Mechanics '95 - Theory and Applications*, S. N. Alturi, G. Yagawa, T. A. Cruse (eds.), Springer, Berlin, 1995, pp. 1638-1643, Proceedings of ICES '95, International Conference on Computational Engineering Science, July 30-Aug. 3, 1995, Mauna Lani, Big Island, Hawaii.

242. Giunta, A.A., Balabanov, V., Burgee, S., Grossman, B., Haftka, R.T., Mason, W.H. and Watson, L.T., "Variable-Complexity Multidisciplinary Design Optimization Using Parallel Computers," in *Computational Mechanics '95 - Theory and Applications*, S. N. Alturi, G. Yagawa, T. A. Cruse (eds.), Springer, Berlin, 1995, pp. 489-494, Proceedings of ICES '95, International Conference on Computational Engineering Science, July 30-Aug. 3, 1995, Mauna Lani, Big Island, Hawaii.

243. Le Riche, R., Knopf-Lenoir, C., and Haftka, R.T., "A Segregated Genetic Algorithm for Constrained Structural Optimization," to appear in Genetic Algorithms: Proceedings of 6th International Conference on Genetic Algorithms (ICGA95) (L. Eshelman, editor), July 1995, pp. 558-565.

244. Mason, W.H., Gürdal, Z., and Haftka, R.T., "Experience in Multidisciplinary Design Education," Paper presented at the ASEE Annual Conference, Annaheim, CA, June 25-28, 1995.

245. Narducci, R., Grossman, B., Valorani, M., Dadone, A. and Haftka, R.T., "Optimization Methods for Non-smooth or Noisy Objective Functions in Fluid Design Problems," Proceedings of the AIAA 12th Computational Fluid Dynamics Conference, Paper No. 95-1648-CP, June 1995.

246. Giunta, A.A., Narducci, R., Burgee, S., Grossman, B., Haftka, R.T., Mason, W.H., and Watson, L.T., "Variable Complexity Response Surface Aerodynamic Design of an HSCT Wing," Proceedings of the 13th AIAA Applied Aerodynamic Conference, San Diego, CA, pp. 994-1002, Paper No. 95-1886-CP, June 1995.

247. Giunta, A.A., Narducci, R., , Burgee, S., Grossman, B., Mason, W.H., Watson, L.T., and Haftka, R.T., "Aerodynamic and Structural Optimization of a High Speed Civil Transport on Parallel Computers," WCSMO-1, Proceedings of 1st World Conference on Structural and Multidisciplinary Optimization, Goslar, Germany, May 28-June 2, 1995, pp. 765-769.

248. Giunta, A.A., Balabanov, V., Kaufman, M., Burgee, S., Grossman, B., Haftka, R.T.*, Mason, W. H., Watson, L.T., "Variable-Complexity Aerodynamic-Structural Optimization via Response Surface Techniques," Multidisciplinary Design Optimization (editted by N.M. Alexandrov and M.Y Hussaini), Proceedings of ICASE/LaRC Workshop on Multidisciplinary Design Optimization, Hampton, VA, March 13-16, 1995 pp. 348-367, SIAM, Philadelphia, 1997.

249. MacMillin, P. E. , Dudley, J., Huang, X., Grossman, B.*, Haftka, R. T., and Mason, W. H., "Multidisciplinary Optimization for the High-Speed Civil Transport," Multidisciplinary Design Optimization (editted by N.M. Alexandrov and M.Y Hussaini), proceedings ICASE/LaRC Workshop on Multidisciplinary Design Optimization, Hampton, VA, March 13-16, 1995, pp. 153-171, SIAM, Philadelphia, 1997.

250. Sensmeier, M.D., Sensharma, K.P., Haftka, R.T., Griffin, O.H., and Watson, L.T., "Experimental Validation of Anti-Optimization Approach for Detecting Delamination Damage," AIAA Paper 95-1508, Proceedings, 36th AiAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics, and Materials Conference, April 10-12, New Orleans, LA, Part 5, pp. 3171-3183.

251. Furuya, H., and Haftka, R.T., "Combining Genetic and Deterministic Algorithms for Locating Actuators on Space Structures," AIAA Paper 95-1400, Proceedings, 36th AiAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics, and Materials Conference, April 10-12, New Orleans, LA, Part 3, pp. 2010-2017.

252. Woodson, M.B., Johnson, E.R., and Haftka, R.T., "Optimal Design of Composite Fuselage Frames for Progressive Failure and Energy Absorption by Genetic Algorithms," AIAA Paper 95-1218, Proceedings, 36th AiAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics, and Materials Conference, April 10-12, New Orleans, LA, Part 1, pp. 509-519, 1995.

253. Harrison, P.N., Le Riche, R., and Haftka, R.T., "Design of Stiffened Composite Panels by Genetic Algorithm and Response Surface Approximations," AIAA Paper 95-1163, Proceedings, 36th AiAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics, and Materials Conference, April 10-12, New Orleans, LA, Part 1, pp. 58-68, 1995.

254. Giunta, A.A., Balabanov, V., Burgee, S., Grossman, B., Haftka, R.T., Mason, W. H. and Watson, L.T., "Parallel Variable-Complexity Response Surface Strategies for HSCT Design," Computational Aerosciences Workshop 95, Moffett Field, CA, March 7-9, 1995. Workshop Proceedings in NASA CD Conference Publication 20010, Editors: W. J. Feiereisen and A. K. Lacer, Jan. 1996, pp. 86-89.

255. Burgee*, S., Giunta*, A. A., Narducci*, R., Watson, L. T., Grossman, B. and Haftka, R. T., "A Coarse Grained Variable-Complexity Approach to MDO for HSCT Design," in *Parallel Processing for Scientific Computing*, D. H. Bailey, P. E. Bjørstad, J. R. Gilbert, M. V. Mascagni, R. S. Schreiber, H. D. Simon, V. J. Torczon, and L. T. Watson (eds.), SIAM, Philadelphia, PA, 1995, pp. 96-101.

256. Scott, E.P., and Haftka, R.T., "Optimization and Experiments," Paer 95-0121, AIAA 33rd Aerospace Sciences Meeting, Reno, NV, Jan. 1995.

257. Dudley*, J., Huang*, X., MacMillin*, P. E. , Grossman, B., Haftka, R. T., and Mason, W. H., "Multidisciplinary Optimization of the High-Speed Civil Transport," Paper 95-0124, AIAA 33rd Aerospace Sciences Meeting, Reno, NV, Jan. 1995.

258. Dudley, J., Huang, X., MacMillan, P. E. , Grossman, B., Haftka, R. T., and Mason, W. H., "Multidisciplinary Design Optimization of a High-Speed Civil Transport," Proceedings of the *First Industry/University Symposium on Research for Future Supersonic and Hypersonic Vehicles*, Editors: A. Homaifar and J. C. Kelly, Jr., TSI Press, Albuquerque, NM, Dec. 1994, pp. 420-427.

259. Haftka, R.T. and Furuya, H. "Comparison of Genetic Algorithms for Placing Actuators on Space Structures," Proceedings, 19th Int. Symposium on Space Technology and Science, ISTS 94-b-08, Yokohama, Japan, pp.1-9, May, 1994.

260. MacMillin, P. Huang, X., Dudley, J.M., Mason, W.H., Grossman, B., and Haftka, R.T., "Trim, Control and Landing Gear Effects in Variable-Complexity HSCT Design," AIAA Paper 94-4381, presented at the AIAA/NASA/USAF/ISSMO Symposium on Multidisciplinary Analysis and Optimimzation, Panama City, Florida, Sept. 7-9, 1994.

261. Dudley, J.M., Huang, X., Haftka, R.T., Grossman, B., and Mason, W.H., "Variable-Complexity Interlacing of Weight Equation and Structural Optimization for the Design of the High Speed Civil Transport," AIAA Paper 94-4377-CP, Proceedings 5th AIAA/USAF/NASA/ISSMO Symposium on Multidisciplinary Analysis and Optimization, Panama City, FL, Sept. 7-9,1994, pp. 1129-1134.

262. Giunta, A.A., Dudley, J.M., Narducci, R., Grossman, B., Haftka, R.T., Mason, W.H., and Watson, L.T., "Noisy Aerodynamic Response and Smooth Approximations in HSCT design," Proceedings 5th AIAA/USAF/NASA/ISSMO Symposium on Multidisciplinary Analysis and Optimization, Panama City, FL, Sept. 7-9,1994, pp. 1117-1128.

263. Huang, X., Haftka, R.T., Grossman, B. and Mason, W.H., "Comparison of Statistical Weight Equations with Structural Optimization of a High Speed Civil Transport," AIAA Paper 94-4379-CP, Proceedings 5th AIAA/USAF/NASA/ISSMO Symposium on Multidisciplinary Analysis and Optimization, Panama City, FL, Sept. 7-9,1994, pp. 1135-1144.

264. Ponslet E., Maglaras G., Cudney, H.H., Nikolaidis, N., and Haftka, R.T., "Analytical and Experimental Comparison of Probabilistic and Determinsitc Optimization," Proceedings 5th AIAA/USAF/NASA/ISSMO Symposium on Multidisciplinary Analysis and Optimization, Panama City, FL, Sept. 7-9,1994, pp. 544-559.

265. Balabanov, V., and Haftka, R.T., "Topology Optimization of Transport Wing Internal Structure," Proceedings 5th AIAA/USAF/NASA/ISSMO Symposium on Multidisciplinary Analysis and Optimization, Panama City, FL, Sept. 7-9,1994, pp. 1395-1406.

266. Mason, B.H., Haftka, R.T., and Johnson, E.R., "Analysis and Design of Composite Curved Channel Frames," AIAA Paper 94-4364-CP, Proceedings, AIAA/NASA/USAF/ISSMO Symposium on Multidisciplinary Analysis and Optimimzation, Panama City, Florida, Sept. 7-9, 1994, Vol. 2, pp. 1023-1040.

267. Le Riche, R. and Haftka, R.T., "Genetic Algorithm for Minimum Thickness Design of Composite Plates," Proceedings, International Conference on Composite Engineering (D. Hui, editor), New Orleans, Aug. 28-31, 1994, pp. 189-190.

268. Burgee, S.L, Watson, L.T., Giunta, A.A., Grossman, B., Haftka, R.T and. Mason, W.H., "Parallel Multipoint Variable-Complexity Approximations for Multidisciplinary Optimization," Proceedings of the IEEE Scalable High-Performance Computing Conference, pp. 734-740, June 1994.

269. Juneja, V., Haftka, R.T., and Cudney, H.H., "Location of Damage in a Space Structure by Contrast Maximization," Proceedings, AIAA Dynamics Specialists Conference, Hilton Head, NC, April 21-22, 1994, pp. 296-306.

270. Haftka, R.T., Le Riche, R., and Harrison, P.N., "Design of Composite Panels by Genetic Algorithms," NATO Advanced Research Workshop, Napflio, Greece, August 25-27, 1994.

271. Furuya, H., and Haftka, R.T., "Static Shape Control of Space Trusses with Partial Measurements," 35th AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics and Matrials Conference, AIAA/ASME Adaptive Structures Forum, AIAA-94-1772, pp.356-367, April, Hilton Head, SC, 1994.

272. Kogiso, N., Gürdal, Z., Watson, L.T., Nagendra, S., and Haftka, R.T., "Minimum Thickness Design of Composite Laminates Subject to Buckling and Strength Constraints by Genetic Algorithms," Proceedings, AIAA/ASME/ASCE/AHS/ASC 35th Structures, Structural Dynamics and Materials Conference, Hilton Head, NC, April 18-20, 1994, pp. 2257-2275.

273. Zhou, M., and Haftka, R.T., "A Comparison of Optimality Criteria Methods for Stress and Displacement Constraints," Proceedings, AIAA/ASME/ASCE/AHS/ASC 35th Structures, Structural Dynamics and Materials Conference, Hilton Head, NC, April 18-20, 1994, Vol. 1, pp. 438-448.

274. Kapania, R.A., Haryadi, S., and Haftka, R.T., "Local/Global Analysis of Square Plates with Cutouts," Proceedings AIAA/ASME/ASCE/AHS/ASC 35th Structures, Structural Dynamics and Material Conference, Hilton Head, SC, April 18-20, 1994, pp. 2124-2134.

275. Furuya, H. and Haftka, R.T. "Locating Actuators for Vibration Suppression on Space Trusses by Genetic Algorithms," in Structures and Controls Optimization, AD-Vol. 38, (N.S. Khot and R.T. Haftka, editors), pp. 1-12, ASME, New York, ASME Winter Annual Meeting, New Orleans, LA, Nov. 30, 1993.

276. Sensharma, P.K., and Haftka, R.T., "Limits of Stress Reduction in a Plate with a Hole Using Piezoelectric Actuators," AD-Vol. 35, (G.P. Carman and E. Garcia, editors) pp. 157-164, ASME, New York, ASME Winter Annual Meeting, New Orleans, LA, Nov. 30, 1993.

277. Kogiso, N., Watson, L.T., Gürdal, Z., and Haftka, R.T., "Genetic Algorithms with Local Improvement for Composite Laminate Design," in Structures and Controls Optimization, AD-Vol. 38, (N.S. Khot and R.T. Haftka, editors), pp. 13-28, ASME, New York, ASME Winter Annual Meeting, New Orleans, LA, November 28-December 3, 1993.

278. Nagendra, S., Haftka, R.T., and Gürdal, Z., "Genetic Algorithm Based Design Procedure for Stiffened Composite Panels under Stability and Strain Constraints," 10th DOD/NASA/FAA Conference on Fibrous Composites in Structures, Hilton Head, SC., Nov. 1993.

279. Woodson, M.B., Haftka, R.T., and Johnson, E.R., "Optimal Design for Energy Absorption of Composite Fuselage Frames," presented at the ASM/EMD Advanced Composite Conference, Dearborn, MI, November 8-11, 1993.

280. Van Wamelen A., Haftka, R.T., and Johnson, E.R., "Optimal Design of Laminated Specimens to Evaluate Competing Composite Failure Criteria," Proceedings of the American Society for Composites, Eighth Technical Conference, Technomic Publishing Company, Inc., Lancaster PA, 1993, pp.1045-1055.

281. Gürdal, Z., and Haftka, R.T., "Genetic Algorithms for Stacking Sequence Design of Laminates," presented at Structural Optimization 93, Rio de Janeiro, Brazil, August 2-6, 1993.

282. Furuya, H. and Haftka, R.T., "Genetic Algorithms for Placing Actuators on Space Structures," Proceedings Fifth International Conference on Genetic Algorithms," July 17-22, 1993, Urbana, IL., pp. 536-542.

283. Nagendra, S., Haftka, R.T., and Gürdal, Z., "Design of Composite Panels by Genetic Algorithms," Conference on Advanced Technology in Design and Fabrication of Composite Materials and Structures, Turin, Italy, May 25-28, 1993.

284. Ponslet E., Maglaras G., Cudney, H.H., Nikolaidis, N., and Haftka, R.T., "Experimental Investigation of Probabilistic Treatment of Uncertainties in Structural Control," proceedings 9th VPI&SU Symposium on Dynamics and Control of Large Structures,Blacksburg, VA, May 10-12, 1993, pp. 481-494.

285. Woodson, M., Johnson, E.R., and Haftka, R.T., "A Vlasov Theory for Laminated Composite Circular Beams with Thin-Walled Open Cross Sections," Proceedings, AIAA/ASME/ASCE-/AHS/ASC 34th Structures, Structural Dynamics and Materials Conference, San Diego, CA, April 19-21, 1993, Part 5, pp. 2742-2760.

286. Nagendra, S., Haftka, R.T., and Gürdal, Z., "Design of a Blade Stiffened Composite Panel by a Genetic Algorithm," Proceedings, AIAA/ASME/ASCE-/AHS/ASC 34th Structures, Structural Dynamics and Materials Conference, San Diego, CA, April 19-21, 1993, Part 4, pp. 2418-2436.

287. Gangadharan, S.N., Nikolaidis, E., Lee, K. and Haftka, R.T., "The Use of Antioptimization to Compare Alternative Structural Models," Proceedings, AIAA/ASME/ASCE-/AHS/ASC 34th Structures, Structural Dynamics and Materials Conference, San Diego, CA, April 19-21, 1993, Part 1, pp. 534-543.

288. Ponslet, E., Haftka, R.T., and Cudney, H. H., "Optimal Placement of Tuning Masses on Truss Structures by Genetic Algorithms," Proceedings, AIAA/ASME/ASCE-/AHS/ASC 34th Structures, Structural Dynamics and Materials Conference, San Diego, CA, April 19-21, 1993, Part 4, pp. 2448-2457.

289. Messer, S., Haftka, R.T. and Cudney, H.H., "The Cost of Model Reference Adaptive Control: Analysis, Experiments and Optimization," Proceedings, AIAA/ASME/ASCE-/AHS/ASC 34th Structures, Structural Dynamics and Materials Conference, San Diego, CA, April 19-21, 1993, Part 6, pp. 3115-3125.

290. Hutchison, M.G., Mason, W.H., Grossman, B., and Haftka, R.T., "Aerodynamic Optimization of an HSCT Configuration Using Variable Complexity Modeling," AIAA Paper 93-0101, prsented at the 31st Aerospace Sciences Meeting, January 11-14, 1993, Reno, Nevada.

291. Sensharma, P.K., and Haftka, R.T., "Stress Reduction in a Composite Plate with a Hole by Applied Induced Strains," Proceedints, Third International Conference on Adpative Structures, Nov. 9-11, 1992, San Diego, CA., pp. 456-457.

292. Nagendra, S.N., Gürdal, Z., Haftka, R.T., and Starnes, J.H., "Buckling and Failure Characteristics of Compression Loaded Stiffened Composite Panels with a Hole," Proceedings, American Society of Composites Technical Meeting, University Park, PA, October 13-15, 1992, pp. 650-661.

293. Unger, E., Hutchinson, M., Huang, X., Mason, W.H., Haftka, R.T., and Grossman, B., "Variable Complexity Aerodynmaic-Structural Design of a High Speed Civil Transport," Presented at the 4th AIAA/AF/NASA/OAI Symposium on Multidisciplinary Analysis and Optimization," Cleveland Ohio, September 21-23, 1992.

294. Ponslet, E., Haftka, R.T., and Cudney, H. H., "Improved Procedure for Eigenvalue Approximation and Sensitivities for modelling uncertainties in active structures," Proceedings 4th AIAA/AF/NASA/OAI Symposium on Multidisciplinary Analysis and Optimization," Cleveland Ohio, September 21-23, 1992, Part 1, pp. 52-62.

295. Ponslet, E., Haftka, R.T., and Cudney, H. H., "Optimal Placement of Actuators and other Peripherals for large truss structures," in Topology Design of Structures, Proceedings of NATO Advanced Research Workshop (M.P. Bendsoe and C.A. Mota Soares, editors), Sesimbra, Portugal, June 20-26, 1992, pp. 135-144, Kluwer Academic Publishers.

296. Johnson, E.R., and Haftka, R.T., "Initial Postbuckling Response of Anisotropic Laminated Rectangular Plates," Proceedings, AIAA/ASME/ASCE/AHS/ASC 33rd Structures, Structural Dynamics and Material Conference, Dallas, Texas, April 13-15, 1992 Part 1, pp. 241-263.

297. Sensharma, P.K., Palaneträ M.J., and Haftka, R.T., Stress Reduction in an Isotropic Plate with a Hole by Applied Induced Strains," Proceedings, AIAA/ASME/ASCE/AHS/ASC 33rd Structures, Structural Dynamics and Materials Conference, Dallas, Texas, April 13-15, 1992, Part 2, pp. 905-913.

298. Sankaranarayanan, S. Haftka, R.T., and Kapania, R.K., "Truss Topology Optimization with Simultaneous Analysis and Design," Proceedings, AIAA/ASME/ASCE/AHS-/ASC 33rd Structures, Structural Dynamics and Material Conference, Dallas, Texas, April 13-15, 1992, Part 5, pp. 2576-2585.

299. LeRiche, R., and Haftka, R.T., "Optimization of Laminate Stacking Sequence for Buckling Load Maximization by Genetic Algorithms," Proceedings, AIAA/ASME/ASCE/AHS-/ASC 33rd Structures, Structural Dynamics and Materials Conference, Dallas, Texas, April 13-15, 1992, Part 5, pp. 2564-2575.

300. Lombardi, M., Haftka, R.T. and Cinquini, C., "Optimization of Composite Plates for Buckling using Simulated Annealing," Proceedings, AIAA/ASME/ASCE/AHS/ASC 33rd Structures, Structural Dynamics and Materials Conference, Dallas, Texas, April 13-15, 1992, Part 5, pp. 2552-2563.

301. Nagendra, S., Haftka, R.T., and Gürdal, Z., "Stacking Sequence Optimization of Simply Supported Composite Plates under Stability and Strain Constraints," Proceedings AIAA/ASME/ASCE/AHS/ASC 33rd Structures, Structural Dynamics and Materials Conference, Dallas, Texas, April 13-15, 1992, Part 5, pp. 2526-2535.

302. Messer, S., Haftka, R.T. and Cudney, H.H., "Experimental Verification of Control Effort associated with Model Reference Adaptive Control," Proceedings, AIAA/ASME/ASCE/AHS/ASC 33rd Structures, Structural Dynamics and Materials Conference, Dallas, Texas, April 13-15, 1992, Part 3, pp. 1568-1579.

303. Palaneträ, M. J., Sensharma, P. K., and Haftka, R. T., "Reduction of Stress Concentration in a Plate with a Hole by Applied Induced Strains," ADPA/AIAA/ASME/SPIE Conference on Active Materials and Adaptive Structures, Alexandria, VA, Nov. 5-7, 1991.

304. Joh, C.-Y., Grossman, B., and Haftka, R. T., "Design Optimization of Transonic Airfoils," Proceedings Third International Conference on Inverse Design Concepts and Optimization in Engineering Sciences," Washington, DC, October 23-25, 1991, pp. 445-456.

305. Gürdal, Z. and Haftka, R. T., "Optimization of Composite Laminates," presented in NATO Advanced Study Institute on Optimization of Large Structural Systems, September 23-October 3, 1991, Berchtsgaden, Germany.

306. Bathelemy, J.-F. and Haftka, R. T., "Recent Advances in Approximation Concepts for Optimum Structural Design," presented in NATO Advanced Study Institute on Optimization of Large Structural Systems, September 23-October 3, 1991, Berchtsgaden, Germany.

307. Adelman, H. M. and Haftka, R. T., "Sensitivity Analysis of Discrete Systems," Chapter 14 in AIAA book on Structural Optimization, also presented in NATO Advanced Study Institute on Optimization of Large Structural Systems, September 23-October 3, 1991, Berchtsgaden, Germany.

308. Rakowska, J., Haftka, R. T., and Watson, L. T., "Tracing the Efficient Curve for Multi-Objective Control-Structure Optimization," presented in Computational Structures Technology, Edinburgh, Scotland, August 20-22, 1991.

309. Haftka, R. T., "Sensitivity of Nonlinear Response," presented at the First U.S. National Congress on Computational Mechanics, Chicago, IL, July 21-24, 1991.

310. Ponslet, E., Haftka, R. T., Hallauer, W. L., and Cudney, H. H., "Desensitizing Structural-Control Design," 8th VPI&SU Symposium on Dynamics and Control of Large Structures, Blacksburg, VA May 6-8, 1991.

311. Nagendra, S., Gürdal, Z., and Haftka, R. T., "Stacking Sequence Optimization of Composite Laminates under Buckling and Strain Constraints," Proceedings Tenth ASCE Conference on Electronic Computations, Indianapolis, IN, April 29-May 1, 1991, pp. 205-212.

312. Chang, K. J., Haftka, R. T., Giles, G. L., and Kao, P.-J., "Sensitivity Based Correlation of Simplified and Refined Structural Models," Proceedings, AIAA/ASME/ASCE/AHS/ASC 32nd Structures, Structural Dynamics and Materials Conference, Baltimore, MD, April 8-10, 1991, Part 1, pp. 238-246.

313. Bendsoe, M. P., Ben-Tal, A., and Haftka, R. T., "New Displacement-Based Methods for Optimal Truss Topology Design," AIAA Paper 91-1215, Proceedings AIAA/ASME/ASCE/AHS/ASC 32nd Structures, Structural Dynamics and Materials Conference, Baltimore, MD, April 8-10, 1991, Part 1, pp. 684-696.

314. Watson, L. T., Haftka, R. T., Lutze, F. H., Plaut, R. H., and Shin, P. Y., "The Application of Globally Convergent Homotopy Methods to Nonlinear Optimization," in Advances in Numerical Partial Differential Equations and Optimization," S. G¢mez, J. P. Hennart and R. A. Tapia (eds.), SIAM, Philadelphia, PA, pp. 284-298, 1991.

315. Haftka, R.T., and Kao, P.-J., "The Use of Optimization for Sharpening Differences between Models," paper presented at ASME Winter Annual Meeting, Dallas, Texas, November 25-30, 1990.

316. Unger, E.R., Rais-Rohani, M., Hutchison, M.G., Haftka, R.T., and Grossman, B., "Multidisciplinary Design of a Subsonic Transport Wing," presented at the Second NASA/Airforce Symposium on Recent Advances in Multidisciplinary Analysis and Optimization, San Francisco, California, September 22-24, 1990.

317. Haftka, R.T., "Screening Actuator Locations for Static Shape Control," NASA CR-181970, January 1990, presented at the Second NASA/Airforce Symposium on Recent Advances in Multidisciplinary Analysis and Optimization, San Francisco, California, September 22-24, 1990.

318. Messer, R. S., and Haftka, R.T., "Control Effort Associated with Model Reference Adaptive Control for Vibration Damping," Fourth Workshop on Computational Control of Flexible Aerospace Systems, Williamsburg, Virginia, July 11-13, 1990.

319. Haftka, R.T., "Integrated Structures-Control Optimization of Space Structures," AIAA Dynamics Specialist Conference, Long Beach, California, April 5-6, 1990, pp. 1-9.

320. Baruch, M., and Haftka, R.T., "Evaluation of Alternatives for Best-Fit Paraboloid for Deformed Antennae Surfaces," Proceedings AIAA/ASME/ASCE/AHS/ASC 31st Structures, Structural Dynamics and Materials Conference, Long Beach, California, April 2-4, 1990, NASA CP-3064, pp. 159-176.

321. Gangadharan, S., Nikolaidis, E., and Haftka, R. T, "Probabilistic System Identification of a Simple Flexible Joint Model," Proceedings AIAA/ASME/ASCE/ AHS/ASC 31st Structures, Structural Dynamics and Materials Conference, Long Beach, California, April 2-4, 1990, Part II, pp. 1134-1142.

322. Padula, S. L., Sandridge, C.A., Walsh, J.L., and Haftka, R.T., "Integrated Controls-Structures Optimization of a Large Space Structure," Proceedings AIAA/ASME/ASCE/ AHS/ASC 31st Structures, Structural Dynamics and Materials Conference, Long Beach, California, April 2-4, 1990, Part I, pp. 258-267.

323. Haftka, R. T., Cohen, G. A., and Mróz, Z., "Deriviatives of Buckling and Vibration Frequencies with Respect to Stiffness and Initial Strain Parameters," ASME Winter Annual Meeting, San Francisco, California, December, 1989.

324. Joh, C. Y., Grossman, B., and Haftka, R. T., "Efficient Optimization Procedures for Transonic Airfoil Design," ASME Winter Annual Meeting, San Francisco, California, December, 1989.

325. Haftka, R. T., and Johnson, E. R., "Initial Postbuckling Response of an Unsymmetrically Laminated Rectangular Plate," Eighth DOD/NASA/FAA Conference on Fibrous Composits in Structural Design, Norfolk Virginia, November 28-30, 1989.

326. Grossman, B., Haftka, R. T., Kao, P., Polen, D. and Sobieski-Sobieszczanski, J., "Integrated Aerodynamic/Structural Design of Transport Wing," paper presented at AIAA/AHS/ASEE Aircraft Design and Operations Meeting, July 31-August 2, 1989, Seattle, Washington.

327. Sandridge, C. A. and Haftka, R. T., "On the Effect of Modal Truncation on Closed-Loop Damping Ratios in Structural Control," in Computer Aided Optimum Design of Structures: Applications, (C. A. Brebbia and S. Hernandez, editors) Computational Mechanics Publications, Springer-Verlag, Southampton, UK, 1989, pp. 159- 168.

328. Haftka, R. T. and Barthelemy, B., "On the Accuracy of Shape Sensitivity," in Computer Aided Optimum Design of Structures: Recent Advances, (C. A. Brebbia and S. Hernandez, editors) Computational Mechanics Publications, Springer-Verlag, Southampton, UK, 1989, pp. 327-336.

329. Schamel, G. C. and Haftka, R. T., "Application of LQG and Direct Rate Feedback Control to Flexible Laboratory Structures," Seventh VPI&SU Symposium on Dynamics and Control of Large Structures, Blacksburg, Virginia, May 8-10, 1989.

330. Yang, J-S., Nikolaidis, E. and Haftka, R. T., "A System Reliability Approach to the Design of Airplane Wing Structures," 5th International Conference on Structural Safety and Reliability, San Francisco, California, August 8-11, 1989.

331. Preumont, A., Czajkowski, E. and Haftka, R. T., "Stabilizing the Neglected Dynamics in Active Control of Vibration," Third International Conference on Recent Advances in Structural Dynamics, Southampton, England, July 18-22, 1988.

332. Nagendra, S.N., Haftka, R. T., and Gürdal, Z. "Design of Stiffened Composite Plate with a Hole," presented at the ASC 4th Technical Conference on Composite Materials, Blacksburg, Virginia, October 3-5, 1989.

333. Katz, Y., Haftka, R. T. and Altus, E., "Optimization of Fiber Directions for Increasing the Failure Load of a Plate with a Hole," presented at the ASC 4th Technical Conference on Composite Materials, Blacksburg, Virginia, October 3-5, 1989.

334. Barthelemy, B., Haftka, R. T., Madapur U. and Sankaranarayanan, S., "Integrated Structural Analysis and Design Using 3-D Finite Elements," Proceedings AIAA/ASME/ ASCE/AHS/ASC 30th Structures, Structural Dynamics and Materials Conference, Mobile, Alabama, April 3-5, 1989, Part 3, pp. 1305-1310.

335. Mróz, Z. and Haftka, R. T., "Sensitivity of Buckling Loads and Vibration Frequencies of Plates," in Buckling of Structures - Theory and Experiment (I. Elishakoff, J. Arbocz, C.D. Babcock and A. Libai, editors), pp. 255-266, Elsevier, Amsterdam, 1988.

336. Haftka, R.T. and Barthelemy, B., "On the Accuracy of Shape Sensitivity Derivatives," GAMM Seminar on Discretization Methods and Structural Optimization, Siegen, Germany, October 5-7, 1988.

337. Shuart, M. J., Haftka, R. T. and Campbell, R. L., "Optimum Design of Swept-Forward High-Aspect-Ratio Graphite-Epoxy Wings," Second NASA/Air Force Symposium on Recent Advances in Multidisciplinary Analysis and Optimization, Hampton, Virginia, September 28-30, 1988.

338. Haftka, R. T., Grossman, B., Kao, P. J. and Polen, D., "Integrated Structural-Aerodynamic Design Optimization," Second NASA/Air Force Symposium n Recent Advances in Multidisciplinary Analysis and Optimization, Hampton, Virginia, September 28-30, 1988.

339. Padula, S. L., Sandridge, C. A., Haftka, R. T. and Walsh, J. L., "Demonstration of Decomposition and Optimization in the Design of Experimental Space Systems," Second NASA/Air Force Symposium on Recent Advances in Multidisciplinary Analysis and Optimization, Hampton, Virginia, September 28-30, 1988.

340. Haftka, R. T., Kao, P. J., Grossman, B. and Polen, D., "Integrated Structural-Aerody-\ namic Design Optimization," presented at the 16th Congress of the International Council of the Aeronautical Sciences, August 28-September 2, 1988.

341. Haftka, R. T. and Adelman, H. M., "Recent Developments in Structural Sensitivity Analysis," 3rd International Conference on CAD/CAM Robotics and Factories of the Future, Southfield, Michigan, August 14-17, 1988, also NASA TM 100668.

342. Sandridge, C. A. and Haftka, R. T., "Effect of Modal Truncation on Derivatives of Optimal Control Performance," International Conference on Computational Engineering Science, Atlanta, Georgia, April 1988.

343. Haftka, R. T., "Integrated Nonlinear Structural Analysis and Design," AIAA Paper 88-2380, presented at the 29th AIAA/ASME/ASCE/AHS Structures, Structural Dynamics and Materials Conference, Williamsburg, Virginia, April 18-20, 1988.

344. Shin, Y. S., Haftka, R. T., Watson, L. T. and Plaut, R. H., "Tracing Structural Optima as a Function of Available Resources by a Homotopy Method," AIAA Paper 88-2335, presented at the 29th AIAA/ASME/ASCE/AHS Structures, Structural Dynamics and Materials Conference, Williamsburg, Virginia, April 18-20, 1988.

345. Barthelemy, B. and Haftka, R. T., "Accuracy Problems of the Semi- Analytical Method for Shape Sensitivity Calculation of Beam-Like Structures," AIAA Paper 88-2284, presented at the AIAA/ASME/ASCE/AHS 29th Structures, Structural Dynamics and Materials Conference, Williamsburg, Virginia, April 18-20, 1988.

346. Haftka, R. T., Grossman, B., Eppard, W. H. and Kao, P. J., "Efficient Optimization of Integrated Aerodynamic/Structural Design," International Conference on Inverse Design Concepts and Optimization in Engineering Sciences II - University Park, PA, October 1987.

347. Haftka, R. T. and Barthelemy, B. M., "Accuracy Problems with the Semianalytical Method for Static Response Sensitivity Analysis," Workshop on Sensitivity Analysis and Optimum Shape Design of Structures," Warsaw, Poland, June 1987.

348. Martinovic, Z. N., Haftka, R. T., Schamel, G. and Hallauer, W. L., "An Analytical and Experimental Investigation of Output Feedback vs. Linear Quadratic Regulator," AIAA Guidance Navigation and Control Conference, Monterey, California, August 1987.

349. Burdisso, R. and Haftka, R. T., "Optimal Location of Actuators for Correcting Distortions Due to Manufacturing Errors in Large Space Structures," presented at the Sixth VPI&SU/AIAA Symposium on Dynamics and Control of Large Structures, June 1987.

350. Shin, Y., Plaut, R. H. and Haftka, R. T., "Simultaneous Analysis and Design for Eigenvalue Maximization," presented at the AIAA/ASME/ASCE/AHS 28th Structures, Structural Dynamics and Materials Conference, Monterey, California, April 1987.

351. Thareja, R. and Haftka, R. T., "Efficient Single-Level Solution of Hierarchical Problems in Structural Optimization," presented at the AIAA/ASME/ASCE/AHS 28th Structures, Structural Dynamics and Materials Conference, Monterey, California, April 1987.

352. Onoda, J. and Haftka, R. T., "Simultaneous Structure/Control Optimization of Large Flexible Space Craft," presented at the AIAA/ASME/ASCE/AHS 28th Structures, Structural Dynamics and Materials Conference, Monterey, California, April 1987.

353. Barthelemy, B. M. and Haftka, R. T., "Physically Based Sensitivity Derivatives of Structural Response," presented at the AIAA/ASME/ASCE/AHS 28th Structures, Structural Dynamics and Materials Conference, Monterey, California, April 1987.

354. Martinovic, Z. N., Haftka, R. T., Hallauer, W. L. and Schamel, G., "A Comparison of Active Vibration Control Techniques: Output Feedback vs. Optimal Control," presented at the AIAA Dynamics Specialists Meeting, Monterey, California, April 1987.

355. Sandridge, C. A. and Haftka, R. T., "Accuracy of Derivatives of Control Performance Using a Reduced Structural Model," presented at the AIAA Dynamics Specialists Meeting, Monterey, California, April 1987.

356. Murthy, D. V. and Haftka, R. T., "Approximations to Eigenvalues of Modified General Matrices," presented at the AIAA Dynamics Specialists Meeting, Monterey, California, April 1987.

357. Grossman, B., Strauch, G. J., Eppard, W. M., Gürdal, Z. and Haftka, R. T., "Integrated Aerodynamic/Structural Design of a Sailplane Wing," AIAA paper 86-2623 presented at the AIAA Aircraft Systems and Design Technology Meeting, Dayton, Ohio, October 1986.

358. Murthy, D. V. and Haftka, R. T., "Sensitivity Analysis and Approximation Methods for General Eigenvalue Problems," NASA CR- 179538, 1986.

359. Pritchard, J., Adelman, H. M. and Haftka, R. T., "Sensitivity Analysis of Mode Shape Node Point Locations," presented at the Symposium on Sensitivity Analysis in Engineering, Hampton, Virginia, September 1986.

360. Murthy, D. and Haftka, R. T., "Survey of Methods for Calculating Sensitivity of General Eigenproblems," presented at the Symposium on Sensitivity Analysis in Engineering, Hampton, Virginia, September 1986.

361. Sobieski, J. and Haftka, R. T., "Interdisciplinary and multilevel Optimum Design," NATO-ASI on Computer Aided Design of Structural and Mechanical Systems, Troja, Portugal, Vol. 3, pp. 29-59, June 1986.

362. Haftka, R. T., "Optimum Control of Structures," NATO-ASI on Computer Aided Design of Structural and Mechanical Systems, Troja, Portugal, Vol. 1, pp. 299-312, June 1986.

363. Haftka, R. T., "Simultaneous Analysis and Design," NATO-ASI on Computer Aided Design of Structural and Mechanical Systems, Troja, Portugal, Vol. 1, pp. 313-321, June 1986.

364. Haftka, R. T., "Finite Elements in Optimal Structural Design," NATO-ASI on Computer Aided Design of Structural and Mechanical Systems, Troja, Portugal, Vol. 1, pp. 270-298, June 1986.

365. Camarda, C. J. and Haftka, R. T., "Evaluation of Several Modal Methods for Transient Structural Analysis," presented at the First World Congress on Computational Mechanics, Austin, Texas, September 1986.

366. Onoda, J. and Haftka, R. T., "Simultaneous Optimization of Structure/Control System of Flexible Spacecraft," Proc. JASS/JSNE 28th Structures Conference, July 17-19, 1986, Yamaguchi, Japan.

367. Barthelemy, B. M., Chon, C. T. and Haftka, R. T., "Accuracy of Finite-Difference Approximations to Sensitivity Derivatives of Static Structural Response," presented at the First World Congress on Computational Mechanics, Austin, Texas, September 1986.

368. Kapania, R. K. and Haftka, R. T., "Sensitivity of Controlled Structures to Imperfections and Modelling Errors," presented at the Tenth US National Congress of Applied Mechanics, Austin, Texas, June 1986.

369. Haftka, R. T., "Integrated Structure and Control System Design," presented at the 20th Israel Conference on Mechanical Engineering, Tel-Aviv, June 23-24, 1986.

370. Thareja, R. and Haftka, R. T., "Numerical Difficulties Associated with Using Equality Constraints to Achieve Multi-Level Decomposition in Structural Optimization," AIAA Paper No. 86- 0854CP, presented at

the AIAA/ASME/ASCE/AHS 27th Structures, Structural Dynamics and Material Conference, San Antonio, Texas, May 1986.

371. Gürdal, Z. and Haftka, R. T., "Compressive Failure Model for Plates with a Cutout Under Compressive and Shear Loads," AIAA Paper 86-1017-CP presented at the AIAA/ASME/ASCE/AHS 27th Structures, Structural Dynamics and Material Conference, San Antonio, Texas, May 1986, AIAA J., Vol. 5.

372. Gürdal, Z. and Haftka, R. T., "Automated Design of Composite Plates for Improved Damage Tolerance," ASTM Composite Materials Design and Testing Symposium, April 1986, Charleston, SC.

373. Haftka, R. T. and Mróz, Z., "First and Second-Order Sensitivity Analysis of Linear and Nonlinear Structures," presented at the symposium on Recent Trends in Aeroelasticity, Structures and Structural Dynamics, Gainesville, Florida, February 6-7, 1986.

374. Haftka, R. T., Nachlas, J. A., Rizzo, T. and Desai, R., "Constraint Approximation in Structural Optimization," Proceedings, SE Chapter, Institute of Management Science, October 1985.

375. Haftka, R. T., Gürdal, Z., Strauch, G. and Grossman, B., "Combined Aerodynamic/Structural Design of a Sailplane Wing," presented at the 22nd Annual Meeting of the Society of Engineering Science, State College, Pennsylvania, October 7-9, 1985.

376. Haftka, R. T. and Kamat, M. P., "Simultaneous Nonlinear Structural Analysis and Design," presented at the 1985 Design Automation Conference, Cincinnati, Ohio, September 10-13, 1985.

377. Gürdal, Z. and Haftka, R. T., "Design of Notched Plates under Compression," presented at the 19th Midwestern Mechanics Conference, Columbus, Ohio, September 9-11, 1985.

378. Haftka, R. T., Hallauer, W. L., Martinovic, Z. and Schamel , G., "On the Effect of Modelling Errors on Optimized Active Control Systems," Proceedings of Second International Symposium on Structural Control, Waterloo, Canada, July 1985, pp. 250-260.

379. Haftka, R. T. and Adelman, H. M., "The Effect of Sensor and Actuator Errors on Static Shape Control of Large Space Structures," VPI/AIAA 5th Symposium on Dynamics and Control of Large Structures, Blacksburg, Virginia, June 1985.

380. Iott, J., Haftka, R. T. and Adelman, H. M., "Selecting Step Sizes in Sensitivity Derivatives by Finite Differences," NASA TM-86382, 1985.

381. Haftka, R. T., Martinovic, A. N., Hallauer, W. L. and Schamel, G., "Sensitivity of Optimized Control Systems to Minor Structural Modifications," AIAA Paper 85-0807-CP, AIAA/ASME/ASCE/AHS 26th Structures, Structural Dynamics and Materials Conference, Orlando, Florida, April 15-17, 1985.

382. Haftka, R. T. and Starnes, J. H., Jr., "Use of Optimum Stiffness Tailoring to Improve the Compressive Strength of Composite Plates with Holes," AIAA/ASME/ASCE/AHS 26th Structures, Structural Dynamics and Materials Conference, Orlando, Florida, April 15-17, 1985.

383. Haftka, R. T. and Grandhi, R. V., "Structural Shape Optimization - A Survey," AIAA paper 85-0772-CP, AIAA/ASME/ASCE/AHS 26th Structures, Structural Dynamics and Materials Conference, Orlando, Florida, April 15-17, 1985.

384. Haftka, R. T., "Simultaneous Structural Analysis and Design for Buckling Constraints," University of Arizona CAD/CAM, Robotics and Automation Conference, Tucson, Arizona, February 13-15, 1985.

385. Adelman, H. M. and Haftka, R. T., "Sensitivity Analysis for Discrete Structural Systems - A Survey," NASA TM 86333, December 1984.

386. Haftka, R. T. and Adelman, H. M., "Selection of Actuator Locations for Static Shape Optimization of Large Space Structures by Heuristic Integer Programming," presented at the Symposium on Advances and Trends in Structures and Dynamics, Washington, D.C., October 1984.

387. Gürdal, Z. and Haftka, R. T., "Design of Stiffened Composite Panels with Fracture Constraints," presented at the Symposium on Advances and Trends in Structures and Dynamics, Washington, D.C., October 1984.

388. Haftka, R. T., "Sensitivity Calculations for Iteratively Solved Problems," presented at the 21st Meeting of the Society of Engineering Science, Blacksburg, Virginia, October 1984.

389. Haftka, R. T., "Simultaneous Analysis and Design," Paper presented at the 5th ASCE EMD Conference, Laramie, Wyoming, August 1984.

390. Grandhi, R. V., Haftka, R. T. and Watson, L. T., "Design Oriented Identification of Critical Times in Transient Response," AIAA paper 84-0899 presented at the 25th AIAA/ASME/ASCE/AHS Structures, Structural Dynamics and Materials Conference, Palm Springs, California, May 1984.

391. Haftka, R. T., Martinovic, Z. and Hallauer, W. L., "Enhanced Vibration Controllability by Minor Structural Modifications," AIAA paper 84-1036 presented at the Dynamics Specialists Conference, Palm Springs, California, May 1984.

392. Adelman, H. M., Haftka, R. T., Camarda, C. J. and Walsh, J. L., "Structural Sensitivity Analysis: Methods, Needs and Plans," Symposium on Recent Experiences in Multidisciplinary Analysis and Optimization, Hampton, Virginia, April 1984.

393. Murthy, D. V. and Haftka, R. T., "Optimization of Cascade Blade Mistuning," Symposium on Recent Experiences in Multidisciplinary Analysis and Optimization, Hampton, Virginia, April 1984.

394. Grandhi, R. V., Thareja, T. and Haftka, R. T., "NEWSUMT-A: A General Purpose Program for Constrained Optimization Using Constraint Approximations," Paper presented at the 3rd ASME International Computer Engineering Conference, Chicago, Illinois, August 1983.

395. Haftka, R. T. and Murthy, D. V., "Optimization of Cascade Blade Mistuning," Paper presented at the 17th Israel Conference on Mechanical Engineering, Tel Aviv, Israel, July 1983.

396. Haftka, R. T. and Adelman, H. M., "An Analytical Investigation of Shape Control of Large Space Structures by Applied Temperatures," Paper presented at the 4th VPI&SU/AIAA Symposium on Dynamics and Control of Large Space Structures, Blacksburg, Virginia, June 1983.

397. Haftka, R. T., "Optimum Placement of Controls for Static Deformations of Large Space Structures," Paper presented at the 18th Midwestern Mechanics Conference, Iowa City, Iowa, May 1983.

398. Haftka, R. T., "Simultaneous Structural/Thermal Optimization," Paper presented at the 2nd International ASME Computer Engineering Conference, San Diego, California, August 1982.

399. Haftka, R. T., "Damage Tolerant Design Using Collapse Techniques," Paper presented at the 23rd AIAA/ASME/ASCE/AHS Structures, Structural Dynamics and Material Conference, New Orleans, Louisiana, May 1982.

400. Malkus, D. S., Reichmann, P. I. and Haftka, R. T., "Applications of the Hughes-Liu Algorithm to the Two-Dimensional Heat Equation," NASA CR-3599, 1982.

401. Adelman, H. M., Haftka, R. T. and Robinson, J. C., "Studies of Implicit and Explicit Solution Techniques in Transient Thermal Analysis of Structures," NASA TP-2038, 1982.

402. Von Mayrhauser, A. K. and Haftka, R. T., "Cost Performance Comparisons for Structural Analysis Software on Mini and Main Frame Computers," CPEUG Conference, San Antonio, Texas, November 1981.

403. Adelman, H. M., Haftka, R. T. and Robinson, J. C., "Some Aspects of Algorithm Performance and Modeling in Transient Thermal Analysis of Structures," Winter Annual Meeting, ASME, Washington, D.C., November 1981.

404. Haftka, R. T. and Von Mayrhauser, A. K., "The Cost Effectiveness of Minicomputers Versus Main Frames for Structural Analysis Problems," Fourth SAE International Conference on Vehicle Structural Mechanics, Detroit, Michigan, November 1981.

405. Haftka, R. T. and Kadivar, H., "Algorithmic Aspects of Transient Heat Transfer Problems in Structures," Symposium on Computational Aspects of Heat Transfer in Structures, Hampton, Virginia, November 1981.

406. Robinson, J. C., Riley, K. M. and Haftka, R. T., "Evaluation of the SPAR Thermal Analyzer on the Cyber-203 Computer," Symposium of Computational Aspects of Heat Transfer in Structures, Hampton, Virginia, November 1981.

407. Haftka, R. T., "Structural Optimization with Aeroelastic Constraints: A Survey of US Applications," International Symposium on Aeroelasticity, Nuremberg, Germany, October 1981.

408. Prasad, B. and Haftka, R. T., "Organization of PARS - A Structural Resizing System," in Advances in Computer Technology, Vol. 11, (Ali Seireg, Editor), ASME 80-525-84, 1980.

409. Haftka, R. T., "Finite Elements and Optimization," lectures presented at the NATO Advanced Study Institute on Modern Structural Optimization, Liege, Belgium, 1980.

410. Adelman, J. M. and Haftka, R. T., "On the Performance of Explicit and Implicit Algorithms for Transient Thermal Analysis of Structures," NASA TM-81880, 1980.

411. Adelman, H. M., Haftka, R. T. and Tsach, U., "Application of Fully Stressed Design Procedures to Redundant and Non-Isotropic Structures," NASA TM-81842, 1980.

412. Starnes, J. H., Jr. and Haftka, R. T., "Preliminary Design of Composite Wing-Box Structures for Global Damage Tolerance," Paper presented at the AIAA/ASME/ASCE/AHS 21st Structures, Structural Dynamics and Material Conference, Seattle, Washington, May 1980.

413. Haftka, R. T. and Prasad, B., "Light Weight Design of the Sides of a Typical 100-Ton High Side Gondola Car," 3rd International Conference on Vehicle Structural Mechanics, Troy, Michigan, October 1979.

414. Haftka, R. T., "Penalty Techniques in Structural Optimization," Invited paper, 16th Annual Meeting, Society of Engineering Science, Evanston, Illinois, September 1979.

415. Adelman, H. M. and Haftka, R. T., "Evaluation of Improved Algorithms for Nonlinear Transient Structural Heat Transfer," National Conference on Numerical Methods in Heat Transfer, College Park, Maryland, September 1979.

416. Haftka, R. T. and Shore, C. P., "Approximate Methods for Combined Thermal/Structural Analysis," NASA TP-1428, 1979.

417. Haftka, R. T., Prasad, B. and Tsach, U., "PARS - Programs for Analysis and Resizing of Structures," NASA CR-159007, 1979.

418. Haftka, R. T. and Prasad, B., "Program for Analysis and Resizing of Complex Structures," presented at the Symposium on Future Trends in Computerized Structural Analysis and Synthesis, October 30, 1978.

419. Prasad, B. and Haftka, R. T., "Structural Optimization Procedure Based on a Cubic Extended Penalty Function," presented at the 8th US National Congress of Applied Mechanics, Los Angeles, June 26-30, 1978.

420. Starnes, J. H., Jr. and Haftka, R. T., "Preliminary Design of Composite Wings for Buckling, Stress and Displacement Constraints," presented at AIAA/ASME 19th Structures, Structural Dynamics and Material Conference, April 3-5, 1978.

421. Giles, G. L. and Haftka, R. T., "SPAR Data Handling Utilities," NASA TM-78701, 1978.

422. Haftka, R. T. and Starnes, J. H., Jr., "Application of a Quadratic Extended Interior Penalty Function for Structural Optimization," AIAA Paper 75-764, AIAA/ASME/SAE 16th Structures, Structural Dynamics and Material Conference, Denver, Colorado, May 1975.

423. Haftka, R. T. and Starnes, J. H., Jr., "WIDOWAC: Wing Design Optimization with Aeroelastic Constraints - Program Manual," NASA TM X-3071, 1974.

424. Haftka, R. T., Starnes, J. H., Jr. and Barton, F. W., "A Comparison of Two Types of Structural Optimization Procedures for Flutter Requirements," AIAA Paper No. 74-405, AIAA/ASME/SAE 15th Structures, Structural Dynamics and Materials Conference, Las Vegas, Nevada, April 1974.

425. Haftka, R. T. and Yates, E. C., Jr., "On Repetitive Flutter Calculations in Structural Design," AIAA 12th Aerospace Sciences Meeting, Washington, D.C., January 1974.

426. Haftka, R. T., "Automated Procedure for Design of Wing Structures to Satisfy Strength and Flutter Requirements," NASA TN D 7264, 1973.

427. Mallett, R. H. and Haftka, R. T., "Progress in Non-Linear Finite Element Analysis Using Asymptotic Solution Techniques," Advances in Computational Methods in Structural Mechanics and Design (Eds. J. T. Oden, R. W. Clugh and Y. Yamamoto), UAH Press, Huntsville, Alabama, pp. 357-373, 1972.

428. Cohen, G. A. and Haftka, R. T., "Feasibility Study of Shell Buckling Using the Modified Structure Method," NASA CR-2008, 1972.

429. Haftka, R. T. and Singer, J., "The Buckling of Discretely Stiffened Conical Shells," presented at the 12th International Congress of Applied Mechanics, Stanford, August 1968.