

Publications

The following publications can be downloaded in *pdf format*

1. Bauchau O.A.: “**Experimental Measurements of Elastic Shear Modulus of Graphite/Epoxy tubes.**” *Journal of Composite Materials*, **15**, March 1981, pp 151 – 156. [PDF](#).
2. Bauchau O.A.: “**Optimal Design of High Speed Rotating Graphite/Epoxy Shafts.**” *Journal of Composite Materials*, **17**, March 1983, pp 170 – 181. [PDF](#).
3. Bauchau O.A.: “**A Beam Theory for Anisotropic Materials.**” *Journal of Applied Mechanics*, **107**, 1985, pp 416 – 422. [PDF](#).
4. Bauchau O.A.: “**A Solution of the Eigenproblem for Undamped Gyroscopic Systems with the Lanczos Algorithm.**” *International Journal of Numerical Methods in Engineering*, **23**, 1986, pp 1705 – 1713. [PDF](#).
5. Bauchau O.A., Coffenberry B.S. and Rehfield L.W.: “**Composite Box Beam Analysis: Theory and Experiments.**” *Journal of reinforced Plastics and Composites*, **6**, No. 1, January 1987, pp 25 – 35. [PDF](#).
6. Bauchau O.A. and Hong C.H.: “**Finite Element Approach to Rotor Blade Modeling.**” *Journal of the American Helicopter Society*, **32**, No 1, 1987, pp 60 – 67. [PDF](#).
7. Bauchau O.A. and Hong C.H.: “**Large Displacement Analysis of Naturally Curved and Twisted Beams.**” *AIAA Journal*, **25**, No 11, 1987, pp 1469 – 1475. [PDF](#).
8. Bauchau O.A. and Hong C.H.: “**Nonlinear Composite Beam Theory.**” *Journal of Applied Mechanics*, **55**, No 1, 1988, pp 156 – 163. [PDF](#).
9. Bauchau O.A., Krafchak T.R. and Hayes J.F.: “**Torsional Buckling Analysis and Damage Tolerance of Graphite/Epoxy Shafts.**” *Journal of Composite Materials*, **22**, 1988, pp 142 – 158. [PDF](#).
10. Bauchau O.A. and Hong C.H.: “**Nonlinear Response and Stability Analysis of Beams Using Finite Elements in Time.**” *AIAA Journal*, **26**, No. 9, 1988, pp 1135 – 1142. [PDF](#).
11. Bauchau O.A. and Liu S.P.: “**Finite Element Based Modal Analysis of Helicopter Rotor blade.**” *Vertica*, **13**, No 2, 1989, pp 197 – 206.

12. Srinivasan, A.V., Cutts, D.G., Shu, H.T., Sharpe, D.L. and Bauchau O.A.: “**Structural Dynamics of a Helicopter Rotor Blade System.**” *Journal of The American Helicopter Society*, **35**, No 1, January 1990, pp 75 – 85. [PDF](#).
13. Bauchau O.A. and Chiang W.Y.: “**Dynamic Analysis of Rotor Flex-beams Based on Nonlinear Anisotropic Shell Models.**” *Journal of The American Helicopter Society*, **38**, No 1, January 1993, pp 55 – 61. [PDF](#).
14. Bauchau O.A. and Kang N.K.: “**A Multibody Formulation for Helicopter Structural Dynamic Analysis.**” *Journal of The American Helicopter Society*, **38**, No 2, April 1993, pp 3 – 14.
15. Bauchau O.A. and Guernsey D.: “**On The Choice of Appropriate Bases for Nonlinear Dynamic Modal Analysis.**” *Journal of the American Helicopter Society*, **38**, No 4, October 1993, pp 28 – 36. [PDF](#).
16. Bauchau O.A. and Bottasso C.: “**Space-Time Perturbation Modes for Nonlinear Dynamic Analysis.**” *Nonlinear Dynamics*, **6**, June 1994, pp 21 – 35. [PDF](#).
17. Bauchau O.A. and Chiang W.Y.: “**Dynamic Analysis of Bearingless Tail-rotor Blades Based on Nonlinear Shell Models.**” *Journal of Aircraft*, **31**, No 6, 1994, pp 1402 – 1410. [PDF](#).
18. Laulusa A., Bauchau O.A. and Theron N.J.: “**Theoretical and Experimental Investigation of the Nonlinear Behavior of Composite Beams.**” *La Recherche Aérospatiale*, **4**, 1995, pp 223 – 240.
19. Bauchau O.A., Damilano G. and Theron N.J.: “**Numerical Integration of Nonlinear Elastic Multibody Systems.**” *International Journal of Numerical Methods in Engineering*, **38**, 1995, pp 2727 – 2751. [PDF](#).
20. Bauchau O.A. and Theron N.J.: “**Energy Decaying Schemes for Nonlinear Beam Models.**” *Computer Methods in Applied Mechanics and Engineering*, **134**, pp 37 – 56, 1996. [PDF](#).
21. Bauchau O.A. and Theron N.J.: “**Energy Decaying Schemes for Nonlinear Elastic Multibody Systems.**” *Computers and Structures*, **59**, No. 2, pp 317 – 331, 1996. [PDF](#).
22. Yun S.H. and Bauchau O.A.: “**Improving Modal Parameter Predictions for Jointed Airframe Panels. Part I: Experiments.**” *Journal of the American Helicopter Society*, **43**, No. 2, pp 156 – 163, 1998. [PDF](#).
23. Yun S.H. and Bauchau O.A.: “**Improving Modal Parameter Predictions for Jointed Airframe Panels. Part II: Improved Numerical Model.**” *Journal of the American Helicopter Society*, **43**, No. 2, pp 164 – 171, 1998. [PDF](#).
24. Bauchau O.A.: “**Computational Schemes for Flexible, Nonlinear Multibody Systems.**” *Multibody System Dynamics*, **2**, pp 169 – 225, 1998. [PDF](#).

25. Bauchau O.A. and Hodges D.H.: “**Analysis of Nonlinear Multibody Systems with Elastic Couplings.**” *Multibody System Dynamics*, **3**, pp 163 – 188, 1999. [PDF](#).
26. Bauchau O.A. and Joo T.: “**Computational Schemes for Nonlinear Elastodynamics.**” *International Journal for Numerical Methods in Engineering*, **45**, pp 693 – 719, 1999. [PDF](#).
27. Bauchau O.A. and Bottasso C.L.: “**On the Design of Energy Preserving Schemes for Flexible, Nonlinear Multibody Systems.**” *Computer Methods in Applied Mechanics and Engineering*, **169**, pp 61 – 79, 1999. [PDF](#).
28. Bauchau O.A.: “**On the Modeling of Friction and Rolling in Flexible Multibody Systems.**” *Multibody System Dynamics*, **3**, pp 209 – 239, 1999. [PDF](#).
29. Bauchau O.A.: “**On the Modeling of Prismatic Joints in Flexible Multibody Systems.**” *Computer Methods in Applied Mechanics and Engineering*, **181**, pp 87 – 105, 2000. [PDF](#).
30. Bauchau O.A.: “**Analysis of Flexible Multibody Systems with Intermittent Contacts.**” *Multibody System Dynamics*, **4**, pp 23 – 54, 2000. [PDF](#).
31. Bauchau O.A. and Bottasso C.L.: “**Contact Conditions for Cylindrical, Prismatic, and Screw Joints in Flexible Multibody Systems.**” *Multibody System Dynamics*, **5**, pp 251 – 278, 2001. [PDF](#).
32. Bauchau O.A. and Nikishkov Y.G.: “**An Implicit Transition Matrix Approach to Stability Analysis of Flexible Multibody Systems.**” *Multibody System Dynamics*, **5**, pp 279 – 301, 2001. [PDF](#).
33. Bauchau O.A., Bottasso C.L. and Nikishkov Y.G.: “**Modeling Rotorcraft Dynamics with Finite Element Multibody Procedures.**” *Mathematical and Computer Modeling*, **33**, pp 1113 – 1137, 2001. [PDF](#).
34. Bauchau O.A. and Nikishkov Y.G.: “**An Implicit Floquet Analysis for Rotorcraft Stability Evaluation.**” *Journal of the American Helicopter Society*, **46**, pp 200 – 209, 2001. [PDF](#).
35. Bauchau O.A., Rodriguez J. and Bottasso C.L.: “**Modeling of Unilateral Contact Conditions with Application to Aerospace Systems Involving Backlash, Freeplay and Friction.**” *Mechanics Research Communications*, **28**, pp 571 – 599, 2001. [PDF](#).
36. Bottasso C.L. and Bauchau O.A.: “**Multibody Modeling of Engage and Disengage Operations of Helicopter Rotors.**” *Journal of the American Helicopter Society*, **46**, pp 290 – 300, 2001. [PDF](#).

37. Bauchau O.A. and Rodriguez J.: “**Modeling of Joints with Clearance in Flexible Multibody Systems.**” *International Journal of Solids and Structures*, **39**, pp 41 – 63, 2002. [PDF](#).
38. Bauchau O.A., Choi J.Y. and Bottasso C.L.: “**Time Integrators for Shells in Multibody Dynamics.**” *Computers and Structures*, **80**, pp 971 – 889, 2002. [PDF](#).
39. Bauchau O.A. and Rodriguez J.: “**Simulation of Wheels in Nonlinear, Flexible Multibody Systems.**” *Multibody System Dynamics*, **7**, pp 407 – 438, 2002. [PDF](#).
40. Bottasso C.L., Bauchau O.A. and Choi J.Y.: “**An Energy Decaying Scheme for Nonlinear Dynamics of Shells.**” *Computer Methods in Applied Mechanics and Engineering*, **191**, pp 3099 – 3121, 2002. [PDF](#).
41. Yang Zhong, Sankar L.N., Smith M.J., and Bauchau O.A.: “**Recent Improvements to a Hybrid Method for Rotors in Forward Flight.**” *Journal of Aircraft*, **39**, pp 804 – 812, 2002.
42. Bauchau O.A., Choi J.Y. and Bottasso C.L.: “**On the Modeling of Shells in Multibody Dynamics.**” *Multibody Dynamics Systems*, **8**, pp 459 – 489, 2002. [PDF](#).
43. Bauchau O.A., Bottasso C.L. and Trainelli L.: “**Robust Integration Schemes for Flexible Multibody Systems.**” *Computer Methods in Applied Mechanics and Engineering*, **192**, pp 395 – 420, 2003. [PDF](#).
44. Bauchau O.A.: “**A Self-Stabilized Algorithm for Enforcing Constraints in Multibody Systems.**” *International Journal of Solids and Structures*, **40**, No 12 – 13, pp 3253 – 3271, 2003. [PDF](#).
45. Bauchau O.A. and Trainelli L.: “**The Vectorial Parameterization of Rotation.**” *Nonlinear Dynamics*, **32**, No 1, pp 71 – 92, 2003. [PDF](#).
46. Bauchau O.A. and Rodriguez J.: “**Formulation of Modal Based Elements in Nonlinear, Flexible Multibody Dynamics.**” *Journal of Multiscale Computational Engineering*, **1**, No 2 & 3 pp 161 – 180, 2003. [PDF](#).
47. Bauchau O.A. and Choi J.Y.: “**The Vectorial Parameterization of Motion.**” *Nonlinear Dynamics*, **33**, No 1, pp 165 – 188, 2003. [PDF](#).
48. Bauchau O.A., Rodriguez J., and Chen, S.Y.: “**Modeling the Bifilar Pendulum Using Nonlinear, Flexible Multibody Dynamics.**” *Journal of the American Helicopter Society*, **47**, No 1, pp 53 – 62, 2003. [PDF](#).
49. Bauchau O.A. and Rodriguez J., and Chen, S.Y.: “**Coupled Rotor-Fuselage Analysis with Finite Motions Using Component Mode Synthesis.**” *Journal of the American Helicopter Society*, **49**, No 2, pp 201 – 211, 2004. [PDF](#).
50. Bauchau, O.A. and Liu, Haiying: “**On the Modeling of Hydraulic Components in Rotorcraft Systems.**” *Journal of the American Helicopter Society*, **51**, No 2, pp 175 – 184, 2006. [PDF](#).

51. Bauchau, O.A. and Ju, Changkuan: “**Modeling Friction Phenomena in Flexible Multibody Dynamics.**” *Computer Methods in Applied Mechanics and Engineering*, **195**, No 50-51, pp 6909 – 6924, 2006. [PDF](#).
52. Bauchau, O.A. and Wang, Jielong: “**Stability Analysis of Complex Multibody Systems.**” *ASME Journal of Computational and Nonlinear Dynamics*, **1**, No 1, pp 71 – 80, 2006. [PDF](#).
53. Laulusa A., Bauchau O. A., Choi J-Y., Tan V. and Li L.: “**Evaluation of some Shear Deformable Shell Elements.**” *International Journal of Solids and Structures*, **43**, pp 5033 – 5054, 2006. [PDF](#).
54. Bauchau, O.A. and Wang, Jielong: “**Efficient and Robust Approaches to the Stability Analysis of Large Multibody Systems.**” *ASME Journal of Computational and Nonlinear Dynamics*, to appear. [PDF](#).
55. Bauchau, O.A. and Wang, Jielong: “**Stability Evaluation and System Identification of Flexible Multibody Systems.**” *Multibody System Dynamics*, to appear. [PDF](#).
56. Laulusa A. and Bauchau, O.A.: “**Review of Classical Approaches for Constraint Enforcement in Multibody Systems.**” *Journal of Computational and Nonlinear Dynamics*, to appear, 2007. [PDF](#).
57. Bauchau, O.A. and Laulusa A.: “**Review of Contemporary Approaches for Constraint Enforcement in Multibody Systems.**” *Journal of Computational and Nonlinear Dynamics*, to appear, 2007. [PDF](#).
58. Bauchau, O.A. and Wang Jielong: “**Efficient and Robust Approaches for Rotorcraft Stability Analysis**” *Journal of the American Helicopter Society*, submitted for publication, 2008. [PDF](#).