

# Bibliography

1. Accorsi, M., Lu, K., Leonard, J., Benney, R., and Stein, K., "Issues in Parachute Structural Modeling: Damping and Wrinkling," AIAA Paper 99-1729, April 1999.
2. Adetona, O., Horta, L. G., Taleghani, B. K., Blandino, J. R., and Woods, K. J., "Vibration Studies of an Inflatable/Rigidizable Hexapod Structure with a Tensioned Membrane," AIAA Paper 2003-1737, April 2003.
3. Adler, A. L. "Finite Element Approaches for Static and Dynamic Analysis of Partially Wrinkled Membrane Structures," Ph.D. thesis, Aerospace Engineering Department, University of Colorado, December 2000.
4. Adler, A. L. and Mikulas, M. M., "Application of a Wrinkled Membrane Finite Element Approach to Advanced Membrane Structures," AIAA Paper 2001-4646, April 2001.
5. Ash, J T., Jenkins, C H., Marker, D K., and Wilkes, J M., "Shape achievement of optical membrane mirrors using coating/substrate intrinsic stresses," *Journal of Spacecraft & Rockets*, Vol. 41, No. 4, July/August 2004, pp. 551-557.
6. Balas, M. J., "Trends in Large Space Structure Control Theory: Fondest Hopes, Wildest Dreams," *Proceedings of IEEE Transactions on Automatic Control*, Vol. ac-27, No. 3, June, 1982.
7. Bales, G. L., Hall, J. L., Flint, E. M., and Glaese, R. M., "Experimental Issues that Impact In-Vacuum Dynamic Characterization of Thin Film Membranes," AIAA Paper 2003-1743, April 2003.
8. Banks, H. T., R. C. Smith, and Y. Wang. *Smart Material Structures: Modeling, Estimation, and Control*, John Wiley and Sons, Inc., New York, New York, 1996.
9. Baruh, H., "Control of the Elastic Motion of Lightweight Structures," AIAA Paper 2001-1340, April 2001.
10. Bekey, I., "A 25 m Diameter Space Telescope Weighing Less than 150 kg," AIAA Paper 99-4478, April 1999.

11. Belvin, K., "Advances in Structures for Large Space Systems," AIAA Paper 2004-5898, September 2004.
12. Bernoulli, J., Jr. "Essai theorique sur les vibrations de plaques elastiques rectangularies et libers," *Novi Commentari Acad Petropolit*, Vol. 5, pp. 197-219, 1789.
13. Black, J. T., and Pappa, R. S., "Photogrammetry and Videogrammetry Methods for Solar Sails and Other Gossamer Space Structures," AIAA Paper 2004-1662, April 2004.
14. Black, J. T., Leifer, J., DeMoss, J. A., Walker, E. N., Belvin, W. K., and Smith, S. W., "Experimental and Numerical Correlation of Gravity Sag in Solar Sail Quality Membranes," AIAA Paper 2004-1579, April 2004.
15. Blandino, J. R., Johnston, J. D., Miles, J. J., and Dharamsi, U. K., "The Effect of Asymmetric Mechanical and Thermal Loading on Membrane Wrinkling," AIAA Paper 2002-1371, April 2002.
16. Blandino, J. R., Johnston, J. D., Miles, J. J., and Soplop, J. S., "Thin Film Membrane Wrinkling due to Mechanical and Thermal Loads," AIAA Paper 2001-1345, April 2001.
17. Blandino, J. R., Pappa, R. S. and Black J. T., "Modal Identification of Membrane Structures with Videogrammetry and Laser Vibrometry," AIAA Paper 2003-1745, April 2003.
18. Boyce, William E. and Richard C. DiPrima. *Elementary Differential Equations and Boundary Value Problems* (7<sup>th</sup> edition), John Wiley and Sons, Inc., New York, New York, 2001.
19. Bubnov, I.G. *Theory of Structures of Ships*, Vol. 2, St. Petersburg, 1914.
20. Burns, J. A. and K. P. Hulsing. "Numerical Methods for Approximating Functional Gains in LQR Boundary Control Problems," *Mathematical and Computer Modeling*, Vol. 33, pp. 89 – 100, 2001.
21. Cadogan, D. P., Lin, J. K., and Grahne, M. S., "The Development of Inflatable Space Radar Reflectarrays," AIAA Paper 99-1517, April 1999.

22. Cadogan, D. P., Scarborough, S. E., Lin, J. K., and Sapna III, G. H., "Shape Memory Composite Development for Use in Gossamer Space Inflatable Structures," AIAA Paper 2002-1372, April 2002.
23. Cambell, J. D. "On the theory of initially tensioned circular membranes subjected to uniform pressure," *Q. Journal of Mechanics and Applied Mathematics*, Vol. 9, pp. 84 – 93, 1956.
24. Campbell, J. E., Smith, S. W., Main, J. A., and Kearns, J., "Staged Microgravity Deployment of a Pressurizing Scale Model Spacecraft," *AIAA Journal of Spacecraft and Rockets*, Vol. 41, No. 4, July-Aug 2004, pp534-542.
25. Cassapakis, C. and Thomas, M., "Inflatable Structures Technology Development Overview," AIAA Paper 95-3738, April 1995.
26. Cauchy, A.L. "Sur l'equilibre le mouvement d'une plaque solide," *Exercises Math*, Vol. 3, p. 328, 1828.
27. Chesnokov, Y. M. and Vasileisky, A. S., "Space-based very high resolution telescope based on amplitude zone plate," *Proceedings of the International Conference on Space Optics*, Toulouse Labège, France, December 1997.
28. Chladni, E. F. *Die Akustik*, Leipzig, 1802.
29. Chmielewski, A. B., C. Moore, and R. Howard. "The Gossamer Spacecraft Initiative," *Proceedings of IEEE*, Paper No. 0-7803-5846-5/00, 1999.
30. Choi, S. H., Chu, S. H., Song, K. D., and King, G. C., "Microwave-Driven Multifunctional Capability of Membrane Structures," AIAA Paper 2002-5751, September 2002.
31. Clem, A. L., Smith, S. W., and Main, J. A., "A Pressurized Deployment Model for Inflatable Space Structures," AIAA Paper 2000-1808, April 2000.
32. Clem, A. L., Smith, S. W., and Main, J. A., "Deployment Dynamics of an Inflatable Solar Array," AIAA Paper 99-1520, April 1999.
33. Clem, A. L., Smith, S. W., and Main, J. A., "Experimental Results Regarding the Inflation of Unfolding Cylindrical Tubes," AIAA Paper 2001-1264, April 2001.
34. Cook, R. D., *Concepts and Applications of Finite Element Analysis*, 2<sup>nd</sup> edition, Wiley, New York, pp. 353 – 357, 1978.

35. Darooka, D. K. and Jensen, D. W., "Advanced Space Structure Concepts and their Development," AIAA Paper 2001-1257, April 2001.
36. Davis, D. J. and Agnes, G. S., "Environmental Disturbance Modeling for Inflatable Space Structures," AIAA Paper 2002-1266, April 2002.
37. deBlonk, B. J., "Selecting Models to Predict the Optical-Level Behavior of Membrane Primary Mirrors," AIAA Paper 2003-1653, April 2003.
38. Ding, H., Yang, B., Lou, M., and Fang, H., "A Two-Variable Parameter Membrane Model for Wrinkling Analysis of Membrane Structures," AIAA Paper 2002-1460, April 2002.
39. Dixit, S., Hyde, R., Weisberg, A., Early, J., Rushford, M., and Britten, J., "Development of Large-aperture, Light-weight Fresnel Lenses for Gossamer Space Telescopes," AIAA Paper 2002-1203, April 2002.
40. Dorrington, A. A., Jones, T. A., Danehy, P. M., and Pappa, R. S., "Laser-Induced Fluorescence Photogrammetry for Dynamic Characterization of Transparent and Aluminized Membrane Structures," AIAA Paper 2003-4798, July 2003.
41. Dragovan, M., "The DART System for Far IR / Submillimeter Space Telescopes," Highly Innovative Space Telescope Concepts, H. A. McEwen, ed., *Proceedings of the SPIE*, Vol. 4849, 2002, pp. 1-7.
42. Dupont Technical Bulletin, H-78317, 2002.
43. Duvvuru, H., Hossain, N., and Jenkins, C. H., "Modeling of an Active Seam Antenna," AIAA Paper 2003-1739, April 2003.
44. Early, J. T., "Solar Sails – Fresnel Zone Plate Lens for a Large Space Based Telescope," AIAA Paper 2002-1705, April 2002.
45. Euler, L. "De motu vibratorio tympanorum," *Novi Commentari Acad Petropolit*, Vol. 10, pp. 243 – 260, 1766.
46. Fang, H. and Lou, M. C., "Analytical Characterization of Space Inflatable Structures—An Overview," AIAA Paper 99-1272, April 1999.
47. Flint, E. M. and Denoyer, K. K., "Approach for Efficiently Evaluating Internally Reacted Global Shape Control Actuation Strategies," AIAA Paper 2003-1738, April 2003.

48. Flint, E. M. and Glaese, R. M., "Characterization, Prediction, and Improvement of Stretched Gossamer Membrane Dynamic Response," AIAA Paper 2001-1410, April 2001.
49. Flint, E. M., Bales, G., Glaese, R. M., and Bradford, R., "Experimentally Characterizing the Dynamics of 0.5m+ Diameter Doubly Curved Shells Made from Thin Films," AIAA Paper 2003-1831, April 2003.
50. Foppl, A. *Vorlesungen uber technische Mechanik*, Vol 1, Oldenburg, Munich, 1951.
51. Fortescue, Peter, John Stark, and Graham Swinerd. *Spacecraft Systems Engineering*. John Wiley and Sons, Ltd., West Sussex, England, 2003.
52. Forward, R. L., "Roundtrip interstellar travel using laser-pushed lightsails," *Journal of Spacecraft and Rockets*, Vol. 21, 1984, pp. 187-195.
53. Galerkin, B.G. *Thin Elastic Plates*, Gostrojisdats, Leningrad, 1933.
54. Garner, C. and Leipold, M., "Developments and Activities in Solar Sail Propulsion," AIAA Paper A00-36971, July 2003.
55. Gaspar, J. L., Mann, T., Behun, V., Wilkie, W. K., and Pappa, R. S., "Development of Modal Test Techniques for Validation of a Solar Sail Design," AIAA Paper 2004-1665, April 2004.
56. Germain, S. *Remarques sur la nature, les bornes et l'etendue de la question des surfaces elastiques et equation general de ces surfaces*, Paris, 1826.
57. Gibson, J. S. and A. Adamian. "A Comparison of Three Approximation Schemes for Optimal Control of a Flexible Structure," *SIAM Journal of Control and Optimization*, Vol. 29, No. 1, pp. 1 – 37, 1991.
58. Glaese, R. M. and Balas, G. L., "Demonstration of Dynamic Tailoring for Gossamer Structures," AIAA Paper 2004-1824, April 2004.
59. Gorinevsky, D., Hyde, T., and Cabuz, C., "Distributed Localized Shape Control of Gossamer Structures," AIAA Paper 2001-1197, April 2001.
60. Gould, S. H. *Variational Methods for Eigenvalue Problems: An Introduction to the Methods of Rayleigh, Ritz, Weinstein, and Aronszajn*, Dover, New York, 1995.

61. Greschik, G., Palisoc, A., Cassapakis, C., Veal, G., and Mikulas, M. M., "Approximating Paraboloids with Axisymmetric Pressurized Membranes," AIAA Paper 98-2102, April 1998.
62. Grosso, R. P. and Yellin, M., "The Membrane Mirror as an Adaptive Optical Element," *The Optical Society of America*, Vol. 67, No. 3, March 1977, pp. 399 – 406.
63. Gullapalli, S. N., Flood, R., Yang, E-H., and Lih, S-S., "New Technologies for the Actuation and Control of Large Aperture Lightweight Optical Mirrors," *Proceedings of the IEEE*, Big Sky, MT, 2003.
64. Gunderson, L. A., Jenkins, C. H., Wilkes, J. M., and Marker, D. K., "Pressure-Augmented Near Net-Shape Membrane Mirror," AIAA Paper 2004-1501, April 2004.
65. Hedgepeth, J. M., "Critical Requirements for the Design of Large Space Structures." Contractor Report NASA-CR-3484, NASA Scientific and Technical Information Branch, 1981.
66. Hencky, H. "Über den spanngszustand in Kreisrunden Platen," *Z. Math Phys*, Vol. 311, pp. 311 – 317, 1915.
67. Henky, H. "Der spanngszustand in rechteckigen platen (Dissertation)," *Z Andew Math and Mech*, Vol. 1, 1921.
68. Hoagg, J., Bernstein, D., Lacy, S. L., and Venugopal, R., "Adaptive Control of a Flexible Membrane Using Acoustic Excitation and Optical Sensing," AIAA Paper 2003-5430, August 2003.
69. Hobbs, K.P., T. Griffith, S.W. Smith, and J.A. Main, "Post-Flight Testing and Analysis of Zero-G Foam Rigidized Struts," AIAA Paper 99-1524, April 1999.
70. Holland, D. B., Virgin, L. N., and Belvin, W. K., "Investigation of Structural Dynamics in a 2-m Square Solar Sail Model Including Axial Loading Effects," AIAA Paper 2003-1746, April 2003.
71. Hollig, Klaus. *Finite Element Methods with B-Splines*. Society for Industrial and Applied Mathematics, Philadelphia, Pennsylvania, 2003.

72. Inman, Daniel J. *Engineering Vibration* (2<sup>nd</sup> edition). Prentice-Hall, Upper-Saddle River, New Jersey, 2001.
73. Inman, Daniel J. *Vibration, with Control, Measurement, and Stability*, Prentice-Hall, Englewood Cliffs, New Jersey, 1989.
74. Jenkins, C. H. and Schur, W. W., "Gore/Seam Architectures for Gossamer Structures," AIAA Paper 2001-1262, April 2001.
75. Jenkins, C. H., "In-situ Manufacturing of Gossamer Spacecraft by Artificial Web-Spinning," AIAA Paper 2001-1493, April 2001.
76. Jenkins, C. H., "Non-linear Dynamic Response of Membranes: An Update," *Applied Mechanics Review*, Vol. 49, No. 10, Part 2, October 1996.
77. Jenkins, C. H., ed., *Gossamer Spacecraft: Membrane and Inflatable Structures Technology for Space Applications*," Progress in Astronautics and Aeronautics, AIAA Vol. 191, 2001.
78. Jha, A. K. and Inman, D. J., "Sliding Mode Control of a Gossamer Structure Using Smart Materials," *Journal of Vibration & Control*, Vol. 10, No. 8, August 2004, pp. 1199-1220.
79. Johnston, J. D., "Finite Element Analysis of Wrinkled Membrane Structures for Sunshield Applications," AIAA Paper 2002-1456, April 2002.
80. Johnston, J. D., Blandino, J. R., and McEvoy, K. C., "Analytical and Experimental Characterization of Gravity Induced Deformations in Subscale Gossamer Structures," AIAA Paper 2004-1817, April 2004.
81. Johnston, J., Blandino, J. R., Black, J. T., and Pappa, R. S., "Structural Analysis and Testing of a Subscale Sunshield Membrane Layer," AIAA Paper 2003-1742, April 2003.
82. Juang, J-N., and Pappa, R. S., "An Eigensystem Realization Algorithm for Modal Parameter Identification and Model Reduction," *Journal of Guidance, Control, and Dynamics*, Vol. 8, No. 5, Sept-Oct 1985, pp. 620 – 627.
83. Kirchhoff, G. R. "Uber das gleichgewichi und die bewegung einer elasischem scheibe," *J. Fuer die Reine und Angewandte Mathematik*, Vol. 40, pp. 51 – 88, 1850.

84. Kukathasan, K. and Pellegrino, S., “Non-linear Vibration of Wrinkled Membranes,” AIAA Paper 2003-1747, April 2003.
85. Kukathasan, S. and S. Pellegrino. “Vibration of Pre-Stressed Membrane Structures in Air,” AIAA Paper 2002-1368, 2002.
86. Lagrange, J. L. *Ann Chim*, Vol. 39, pp. 149 – 207, 1828.
87. Lee, K. and Lee, S. W., “Analysis of Gossamer Space Structures using Assumed Strain Formulation Solid Shell Elements,” AIAA Paper 2002-1559, April 2002.
88. Leifer, J., Belvin, W. K., Black, J. T., and Behun, V., “Evaluation of Shear Compliant Borders for Wrinkle Reduction in Thin Film Membrane Structures,” AIAA Paper 2003-1984, April 2003.
89. Leissa, A. W. “The Historical Bases of the Rayleigh and Ritz Methods,” *Journal of Sound and Vibration*, Vol. 1, pp. 1 – 28, 2005.
90. Levy, M. “Memoire sur la theorie des plaques elastiques planes,” *J. Math Pure Appl*, Vol. 3, p. 219, 1899.
91. Lopez, B. C., Lih, S-S., Liefer, J., and Guzman, G., “Study of Ripple Formation in Unidirectionally-Tensioned Membranes,” AIAA Paper 2004-1737, April 2004.
92. Lord Kelvin and Tait, P.G. *Treatise on Natural Philosophy*, Vol. 1, Clarendon Press, Oxford, 1883.
93. Main, J. A., Martin, J., and Nelson, G., “Noncontact Shape Control of Membrane Mirrors,” *Proceedings of the Ultra Lightweight Space Optics Challenge Workshop*, Napa, CA, March 1999.
94. Malacara, D. *Optical Shop Testing*, John Wiley and Sons, Inc., New York, 1992.
95. Marker, D. K. and Jenkins, C. H., “Surface Precision of Optical Membranes with Curvature,” *Optics Express*, Vol. 1, No. 11, pp. 324 – 331, 1997.
96. Meirovitch, Leonard. *Principles and Techniques of Vibrations*, Prentice-Hall, Upper Saddle River, New Jersey, 1997.
97. Meyer, C. G., Liefer, J., Lopez, B. C., Jones, D. C., and Caddell, B. C., “Zero- and One-g Comparison of Ripple Amplitude in Single-Curved Parabolic Membranes using Photogrammetry,” AIAA Paper 2004-1736, April 2004.

98. Miller, Robert E. "Optimal Sensor Placement via Gaussian Quadrature," *Applied Mathematics and Computation*, Vol. 97, pp. 71 – 97, 1998.
99. Miyazaki-Kawasaki, Y. and Furuya, H., "Static Shape Control of Membrane Structures by Piezoelectric Films Bonded Around Creases," AIAA Paper 2001-1619, April 2001.
100. Morse, Philip M. *Vibration and Sound* (1<sup>st</sup> edition). McGraw-Hill Book Company, Inc., New York, New York, 1936.
101. Murphey, T. W. and Mikulas, M. M., "Non-linear Effects of Material Wrinkles on the Stiffness of Thin Polymer Films," AIAA Paper 99-1341, April 1999.
102. Murphey, T. W., "The Constitutive Modeling of Thin Films with Random Material Wrinkles," AIAA Paper 2001-1347, April 2001.
103. Navier, C. L. M. H. *Bulletin des Sciences de la Societe Philomathique de Paris*, 1823.
104. Pappa, R. S., Black, J. T., and Blandino, J. R., "Photogrammetric Measurement of Gossamer Spacecraft Membrane Wrinkling," *Proceedings of the Society for Experimental Mechanics Conference*, Charlotte, NC, June 2003.
105. Pappa, R. S., Lassiter, J. O., and Ross, B. P., "Structural Dynamics Experimental Activities in Ultralightweight and Inflatable Space Structures," *Journal of Spacecraft and Rockets*, Vol. 40, No. 1, 2003, pp. 15 – 23; also AIAA Paper 2001-1263.
106. Pappa, R.S., Black, J.T., Blandino, J.R., Jones, T.W., Danehy, P.M., and Dorrington, A.A., "Dot-Projection Photogrammetry and Videogrammetry of Gossamer Space Structures," *Journal of Spacecraft and Rockets*, Vol. 40, No. 6, pp. 858 – 867, Nov. 2003.
107. Park, Gyuhae, Eric Ruggiero, and Daniel J. Inman. "Dynamic Testing of an Inflatable Structure using Smart Materials," *Smart Materials and Structures*, Vol. 11, No.1, pp. 147-166, 2002.
108. Peng, F., Hu, Y-R., and Ng, A., "Active Control of Inflatable Structure Membrane Wrinkles Using Genetic Algorithm and Neural Network," AIAA Paper 2004-1827, April 2004.

109. Poisson, S. D. "Memoire sur l'equilibre et le mouvement des corps elastique," *Mem Acad Sci*, Vol. 8, p. 357, 1829.
110. Prenter, P.M. *Splines and Variational Methods*. John Wiley and Sons (New York), 1975.
111. Quadrelli, M. and Sirlin, S., "Modeling and Control of Membranes for Gossamer Spacecraft: Part 1: Theory," AIAA Paper 2001-1201, April 2001.
112. Redding, D. C., Shi, F., Basinger, S. A., Cohen, D., Green, J. J., Lowman, A. E., and Ohara, C. M., "Wavefront Sensing and Control for Large Space Optics," *Proceedings of the IEEE*, Big Sky, MT, 2003.
113. Reddy, J. N. *An Introduction to the Finite Element Method*. McGraw Hill Book Co., New York, 1993.
114. Reynolds, R. R., Ferguson, T. P., and Funkhouser, J. C., "Measurement of Residual Wrinkles in Polymer Membranes," AIAA Paper 2001-1346, April 2001.
115. Rogers, C. and Agnes, G. S., "Active Axisymmetric Optical Membranes," AIAA Paper 2002-1450, April 2002.
116. Ruggiero, E. J., Bonnema, G. T., and Inman, D. J., "Application of SISO and MIMO Modal Analysis Techniques on a Membrane Mirror Satellite." *Proceedings of 2003 ASME International Mechanical Engineering Congress and Exposition*, Aerospace Division, Washington, D.C., Nov. 2003, pp. 63 – 69.
117. Ruggiero, E. J., Jacobs, J. H., and Babb, B., "A SPIDER Technology Overview," AIAA Paper 2004-1822, April 2004.
118. Ruggiero, E. J., Jha, A. K., Park, G., and Inman, D. J., "A Literature Review of Ultra-Light and Inflated Toroidal Satellite Components," *The Shock and Vibration Digest*, Vol. 35, No. 3, pp. 171 – 181, May 2003.
119. Ruggiero, E. J., Park, G., and Inman, D. J., "Multi-Input Multi-Output Vibration Testing of an Inflatable Torus," *Mechanical Systems & Signal Processing*, Vol. 18, No. 5, September 2004, pp. 1187-1201.

120. Salama, M. and Jenkins, C. H., "Intelligent Gossamer Structures: A Review of Recent Developments and Future Trends," AIAA Paper 2001-1196, April 2001.
121. Shaker, Francis J. "Effect of Axial Load on Mode Shapes and Frequencies of Beams," NASA Technical Note TN D-8109, 1975.
122. Slade, K. N. and Tinker, M. L., "Analytical and Experimental Investigation of the Dynamics of Polyimide Inflatable Cylinders," AIAA Paper 99-1518, April 1999.
123. Smith, S. W. and Main, J. A., "Modeling the Deployment of Inflating Space Structures," *Gossamer Spacecraft: Membrane/Inflatable Structures Technologies for Space Applications*, Ed. C.H. Jenkins, AIAA, Washington, DC, 2001, pp. 203-241.
124. Smith, S.W., Elliott, M. D., Main, J. A., and Clem, A. L., "Post-Flight Testing and Analysis of Zero-Gravity Deployment of an Inflating Tube," AIAA Paper 2001-1265, April 2001.
125. Sobers, D. M., Agnes, G. S., and Mollenhauer, D., "Smart Structures for Control of Optical Surfaces," AIAA Paper 2003-1559, April 2003.
126. Sodano, H. "Development of Novel Eddy Current Dampers for the Suppression of Structural Vibrations" Ph. D. Dissertation, Virginia Polytechnic Institute and State University, Blacksburg, Virginia, 2005.
127. Sodano, H.A., Park, G. and Inman, D.J., 2003, "An Investigation into the Performance of Macro-Fiber Composites for Sensing and Structural Vibration Applications," *Mechanical Systems and Signal Processing*, Vol. 18, No. 3, pp. 683-697.
128. Solter, M. J., Horta, L. G., and Panetta, A. D., "A Study of a Prototype Actuator Concept for Membrane Boundary Control," AIAA Paper 2003-1736, April 2003.
129. Stevens, H.H. "Behavior of Circular Membranes Stretched above the Elastic Limit by Air Pressure," *Exp Stress Analysis*, Vol. 2, pp. 139 – 146, 1944.
130. Strang, G., and G.J. Fix. *An Analysis of the Finite Element Method*. Prentice-Hall, Englewood Cliffs, New Jersey, 1973.

131. Su, X., Abdi, F., Taleghani, B., and Blandino, J. R., "Wrinkling Analysis of a Kapton Square Membrane Under Tensile Loading," AIAA Paper 2003-1985, April 2003.
132. Sung, Y.-G., "An Estimator-based Sliding Mode Control for Maneuvering a Flexible Spacecraft," *Journal of Sound and Vibration*, Vol. 256, No. 1, 2002, pp. 155 – 171.
133. Tadi, M. "Computational Algorithm for Controlling a Timoshenko Beam," *Computer Methods in Applied Mechanics and Engineering*, Vol. 153, pp. 153 – 165, 1998.
134. Tadi, M. "Finite Elements for Modeling and Control of a Mindlin Plate," *Computers in Mathematical Applications*, Vol. 25, No. 7, pp. 81-99, 1993.
135. Takami, H. and Iye, M., "Membrane Deformable Mirror for SUBARU Adaptive Optics," *Adaptive Optics in Astronomy*, SPIE Vol. 2201, 1994, pp. 762 – 767.
136. Tessler, A. and S. B. Dong. "On a hierarchy of conforming Timoshenko beam elements," *J. Comput. Struct.*, Vol. 14, pp. 335 – 344, 1981.
137. Tessler, A., Sleight, D. W., and Wang, J. T., "Non-linear Shell Modeling of Thin Membranes with Emphasis on Structural Wrinkling," AIAA Paper 2003-1931, April 2003.
138. Timoshenko, S. P. "On large deflections of circular plates," *Mem Inst Ways Commun*, 89, 1915.
139. Timoshenko, S. P. "Sur la stabilite des systemes elastiques," *Ann des Points et Chaussees*, Vol. 13, pp. 496 – 566, 1913.
140. Timoshenko, S. P. and S. Woinowsky-Krieger. *Theory of Plates and Shells* (2<sup>nd</sup> edition), McGraw-Hill, New York, New York, 1959.
141. Tolstov, Georgi P. *Fourier Series*, Dover Publications, New York, New York, 1962.
142. Tsunoda, H. and Senbokuya, Y., "Shape Measurement of a Flat Stretched Lightweight Membrane for Planar Antenna Structure," AIAA Paper 2001-1597, April 2001.

143. Tyson, Robert K. *Introduction to Adaptive Optics*, SPIE Press, Bellingham, Washington, 2000.
144. Tzou, H. S., Chai, W. K., and Wang, D. W., "Micro-actuators and Location Sensitivity of Actuator Patches Laminated on Toroidal Shells," *Journal of Vibration & Acoustics-Transactions of the ASME*, Vol. 126, No. 2, April 2004, pp. 284-297.
145. Tzou, H. S., Wang, D. W., and Chai, W. K., "Dynamics and Distributed Control of Control of Conical Shells Laminated with Full and Diagonal Actuators," *Journal of Sound and Vibration*, Vol. 256, No. 1, 2002, pp. 65 – 79.
146. Ventsel, Eduard and Theodor Krauthammer. *Thin Plates and Shells: Theory, Analysis, and Applications*. Marcel Dekker, Inc., New York, New York, 2001.
147. Von Karman, T. "Festigkeitsprobleme in Maschinenbau", *Encycl de Math Wiss*, Vol. 4, pp. 348 – 351, 1910.
148. Wada, B. K. and Lou, M., "Pre-flight Validation of Gossamer Structures," AIAA Paper 2002-1373, April 2002.
149. Weil, N.A. and N.M. Newark. "Large plastic deformations of circular membranes," *Journal of Appl Mech*, Vol. 22, pp. 533 – 538, 1955.
150. Welch, A.L. and Smith, S. W., "Experimental Results Regarding Two-Dimensional Deployment of Inflatable Beams," AIAA Paper 2003-1976, April 2003.
151. Wertz, James R. and Wiley J. Larson. *Space Mission Analysis and Design* (3<sup>rd</sup> edition). Microcosm Press, El Segundo, California, 1999.
152. Whites, K. W. and Knowles, T. R., "Electromagnetic Force and Torque Calculations for Fibrous Ultra-Lightweight Sails," *Electromagnetics*, Vol. 23, No. 8, Nov-Dec. 2003, pp. 681-696.
153. Wilkes, J. M. "Analysis of Air Gap Effects on the Dynamics of an Adaptive Membrane Mirror," Air Force Research Laboratory Annual Report, Albuquerque, New Mexico, 2005.

154. Wilkie, W. K., Bryant, R. G., High, J. W., Fox, R. L., Hellbaum, R. F., Jalink, A., Little, B. D., and Mirick, P. H., "Low-Cost Piezocomposite Actuator for Structural Control Applications," *Proceedings of the 7th SPIE International Symposium on Smart Structures and Materials*, Newport Beach, CA, 2000, Vol. 3991, pp. 323 – 334.
155. Williams, R. B., Austin, E. M., and Inman, D. J., "Local Effects of PVDF Patches on Inflatable Space-based Structures," AIAA Paper 2001-1198, April 2001.
156. Williams, R. B., Grimsley, B. W., Inman, D. J., and Wilkie, W. K., "Manufacturing and Mechanics-Based Characterization of Macro Fiber Composite Actuators," *Proceedings of the International Mechanical Engineering Conference and Exposition*, Aerospace Division, New Orleans, LA, Nov 2002, pp. 79 - 89.
157. Witherspoon, S. and Tung, S., "Design and Fabrication of an EAP Actuator System for Space Inflatable Structures," AIAA Paper 2002-1449, April 2002.
158. Wong, Y. W. and Pellegrino, S., "Computation of wrinkle amplitudes in thin membranes," AIAA Paper 2002-1369, April 2002.
159. Wong, Y. W., S. Pellegrino, and K. C. Park, "Prediction of Wrinkle Amplitudes in Square Solar Sails," AIAA Paper 2003-1982, April 2003.
160. Yang, B., Ding, H., Lou, M., and Fang, H., "A New Approach to Wrinkling Prediction for Space Membrane Structures," AIAA Paper 2001-1348, April 2001.