

XIAOMIN DENG, Ph.D. (Updated in April 2008)

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EDUCATION

- Ph.D.1990 *Applied Mechanics (with minor in Materials Science)*,
California Institute of Technology
- M. S.1985 *Applied Mechanics*, California Institute of Technology
- B. S.1982 *Flight Vehicle Design and Applied Mechanics*, Beijing University of
Aeronautics and Astronautics, the People's Republic of China

PROFESSIONAL EXPERIENCE

- 2001-Present *Professor* of Mechanical Engineering, University of South Carolina
- 1995-2001 *Associate Professor* of Mechanical Engineering, Univ. of South Carolina
- 1990-1995 *Assistant Professor* of Mechanical Engineering, Univ. of South Carolina

HONORS AND AWARDS

- University of South Carolina nominee for NSF Presidential Faculty Fellows Awards, 1994
- Engineering Foundation Research Initiation Award, 1993

PROFESSIONAL SERVICE (partial list)

- Reviewed papers for over 35 technical journals
- Served as session chairs/organizers or on editorial committees for many conferences
- Organized the international 37th Society of Engineering Science Annual Technical Meeting in 2000 as a conference co-chair.

UNIVERSITY SERVICE (partial list)

- Graduate Council (Aug. 2007-present)
- University Subcommittee on T&P policy revision in Faculty Manual (Feb. 2008-present)
- University Committee on Tenure and Promotion (Aug. 2004-May 2007)
- Dept Graduate Director (June 2000-May 2007)
- University Library Committee and College Library Representative (1995-Aug. 2002)

TEACHING AT THE UNIVERSITY OF SOUTH CAROLINA

- Taught 15 different courses (7 below 500 level, 3 at 500 level, and 5 at 700/800 level)
- Curriculum Development: EMCH 722 (Plasticity), EMCH 717 (Advanced Finite Element Methods), and EMCH 308 (Introduction to Finite Element Stress Analysis)

GRANTS AND CONTRACTS (\$1.3 millions as PI + \$9.3 millions as co-PI)

PUBLICATIONS (75 fully refereed papers; 40 partially reviewed papers; 126 invited and contributed conference presentations, including 1 keynote talk; 48 seminars)

Fully Reviewed Papers:

75. L. Wang, H.W. Zhang, X. Deng, "Influence of defects on mechanical properties of bicrystal copper interfaces," *Journal of Physics D: Applied Physics* (accepted).
74. J. Zuo, X. Deng, M.A. Sutton, and C-S Cheng, "Three-dimensional crack growth in ductile materials: Effect of stress constraint on crack tunneling," *ASME J. of Pressure Vessel Technology* (in press).
73. S. Xu and X. Deng, "Nanoscale void nucleation and growth and crack tip stress evolution ahead of a growing crack in a single crystal," *Nanotechnology* **19**, 115705 (15 pp), 2008.
72. S. Xu and X. Deng, "A study of texture patterns in friction stir welds," *Acta Materialia* **56**, 1326-1341, 2008.
71. W. Zhang and X. Deng, "Elastic fields near the tip of a semi-infinite crack and a cohesive zone in a degenerate orthotropic material," *Journal of Elasticity* **90** (3), 271-282, 2008.
70. J. Yan, M.A. Sutton, X. Deng, C.-S. Cheng, "Mixed-mode fracture of ductile thin-sheet materials under combined in-plane and out-of-plane loading," *International Journal of Fracture* **144**, 297-321, 2007
69. W. Zhang and X. Deng, "Elastic fields around the cohesive zone of a mode III crack perpendicular to a bi-material interface," *ASME Journal of Applied Mechanics* **74**, 1049-1052, 2007.
68. M.A. Sutton, J. Yan, X. Deng, C.-S. Cheng, P. Zavattieri, "3D digital image correlation to quantify deformation and COD in ductile aluminum under mixed-mode I/III loading," *Optical Engineering* 46(5), pp. 051003-1 – 051003-17, 2007.
67. W. Lan, X. Deng, and M.A. Sutton, "Three-dimensional finite element simulations of mixed-mode stable tearing crack growth experiments," *Engineering Fracture Mechanics* **74**, 2498-2517, 2007.
66. W. Zhang and X. Deng, "Mixed-mode I/III fields around a crack with a cohesive zone ahead of the crack tip," *Mechanics Research Communications* **34**, 172-180, 2007.
65. W. Lan, X. Deng, M.A. Sutton, and C-S Cheng, "Study of slant fracture in ductile materials," *International Journal of Fracture* **141**, 469-496, 2006.
64. Sutton, M.A., Reynolds, A. P., Ge, Y.Z., Deng, X., "Limited weld residual stress measurements in fatigue crack propagation Part II: FEM-based fatigue crack propagation with complete residual stress fields," *Fatigue and Fracture of Engineering Materials and Structures* **29**, 537-545, 2006.
63. Ge, Y.Z., Sutton, M.A., Deng, X., Reynolds, A. P., "Limited weld residual stress measurements in fatigue crack propagation Part I: Complete field representation through least-square finite element smoothing," *Fatigue and Fracture of Engineering Materials and Structures* **29**, 524-536, 2006.
62. W. Zhang and X. Deng, "Asymptotic fields around an interfacial crack with a cohesive zone ahead of the crack tip," *International Journal of Solids and Structures* **43**, 2989-3005, 2006.

61. X. Deng and M. A. Sutton, "Experiments, analysis and simulation of mixed mode ductile fracture," American Society of Mechanical Engineers, Pressure Vessels and Piping Division (Publication) PVP, v 6, Proceedings of the ASME Pressure Vessels and Piping Conference 2005 - Materials and Fabrication, PVP2005, 2005, p 179-182 (Proceedings of the 2005 ASME PVP Conference, paper # PVP2005-71384, Denver, Colorado, July 17-21, 2005).
60. W. Chen and X. Deng, "Structural damping caused by micro-slip along frictional interfaces," *International Journal of Mechanical Sciences* **47**, 1191-1211, 2005.
59. W. Zhang and X. Deng, "Formulation of a cohesive zone model for a Mode III crack," *Engineering Fracture Mechanics* **72**, 1818-1829, 2005.
58. X. Deng, F. Ma, and M. A. Sutton, "A damage mechanics model for creep and oxygen embrittlement in metals," *International Journal of Damage Mechanics* **14**, 101-126, 2005.
57. J. Zuo, X. Deng, and M. A. Sutton, "Advances in Tetrahedral Mesh Generation for Modeling of Three-dimensional Regions with Complex, Curvilinear Crack Shapes", *International J for Numerical Methods in Engineering* **63**, 256-275, 2005.
56. X. Deng and S. Xu, "Two-dimensional finite element simulation of material flow in the friction stir welding process," *Journal of Manufacturing Processes* **6**, 125-133, 2004.
55. J. Zuo, X. Deng, M.A. Sutton, and C-S Cheng "Crack Tunneling: Effect of Stress Constraint," *American Society of Mechanical Engineers, Applied Mechanics Division, AMD*, v 255, *Proceedings of the ASME Applied Mechanics Division - 2004*, 2004, p 393-400 (Paper # IMECE 2004-60700, Proc. of 2004 ASME International Mechanical Engineering Congress, Nov. 13-20, 2004, Anaheim, CA).
54. J. Zuo, X. Deng and M. A. Sutton, "Computational Aspects of 3D Crack Growth Simulations", *American Society of Mechanical Engineers, Applied Mechanics Division, AMD*, v 255, *Proceedings of the ASME Applied Mechanics Division - 2004*, 2004, p 385-391 (Paper # IMECE 2004-60699, Proc. of 2004 ASME International Mechanical Engineering Congress, Nov. 13-20, 2004, Anaheim, CA).
53. M. S. Davoud and X. Deng, "Finite element modeling of GMAW process: Evolution and formation of residual stresses upon cooling", Paper # IMECE 2004-59241, Proc. of 2004 ASME International Mechanical Engineering Congress, Nov. 13-20, 2004, Anaheim, CA.
52. J. Zuo, M. A. Sutton, and X. Deng, "Basic studies of ductile failure processes and implications for fracture prediction," *Fatigue and Fracture of Engineering Materials and Structures* **27**, 231-243, 2004.
51. S. Xu and X. Deng, "An evaluation of simplified finite element models for spot-welded joints," *Finite Elements in Analysis and Design* **40**, 1175-1194, 2004.
50. C. Shet, X. Deng, and A. E. Bayoumi, "Finite element simulation of high-pressure water jet assisted metal cutting," *International Journal of Mechanical Sciences* **45**(2003) 1201-1228.
49. M. S. Davoud and X. Deng, "A comparison between three- and two-dimensional thermal finite element analysis of gas metal arc welding process," *Proceedings of the 2003 ASME International Mechanical Engineering Congress & Exposition (IMECE 2003)*, Paper # 41649 (8 pages), American Society of Mechanical Engineers, Nov. 2003.

48. E. Mahgoub, X. Deng, and M. A. Sutton, "Three-dimensional stress and deformation fields around flat and slant cracks under remote Mode I loading conditions," *Engineering Fracture Mechanics* 70 (2003) 2527-2542.
47. C. Shet and X. Deng, "Residual stresses and strains in orthogonal metal cutting," *International Journal of Machine Tools & Manufacture* 43 (2003) 573-587.
46. M. A. Sutton, F. Ma, and X. Deng, "Mixed mode I/II crack-tip stress fields characterized by a triaxial stress parameter and a plastic deformation extent based characteristic length," *Fatigue and Fracture Mechanics: 33rd Volume, ASTM STP 1417*, W. G. Reuter and R. S. Piascik, Eds., American Society for Testing and Materials, West Conshohocken, PA, 2002.
45. E. Mahgoub, X. Deng, and M. A. Sutton, "Stress and deformation fields around a slant crack," Proceedings of the 21st Southeastern Conference on Theoretical and Applied Mechanics (SECTAM XXI), pp. 361-369 (Paper # 2110), Orlando, Florida, May 19-21, 2002.
44. S. Xu and X. Deng, "A three-dimensional model for the friction-stir welding process," CD-ROM Proceedings of the 21st Southeastern Conference on Theoretical and Applied Mechanics (SECTAM XXI), pp. 699-704 (Paper # 2108), Orlando, Florida, May 19-21, 2002.
43. G. Shi, X. Deng, and C. Shet, "A finite element study of the effect of friction in orthogonal metal cutting," *Finite Elements in Analysis and Design* 38 (2002) 863-883.
42. A. T. Zehnder, Y. K. Potdar, X. Deng, and C. Shet, "An experimental and computational study of temperature and strain fields in metal cutting," Proceedings of Symposium on Fundamental Issues in Machining, MED Vol. 23309, 2001 ASME International Mechanical Engineering Conference and Exposition (IMECE 2001), New York, NY, November 11-16, 2001.
41. X. Deng and S. Xu, "Solid mechanics simulation of friction stir welding process," *Transactions of NAMRI/SME*, SME Vol. XXIX, p. 631-638, 2001, Society of Manufacturing Engineers.
40. F. Ma, M. A. Sutton, and X. Deng, "Plane strain mixed mode crack-tip stress fields characterized by a triaxial stress parameter and a plastic deformation extent based characteristic length," *Journal of Mechanics and Physics of Solids* 49 (2001) 2921-2953.
39. S. Xu, X. Deng, A. P. Reynolds, and T. U. Seidel, "Finite element simulation of material flow in friction stir welding," *Science and Technology of Welding and Joining* 6 (2001) 191-193.
38. C. Shet and X. Deng, "Finite element analysis of the orthogonal metal cutting process," *Journal of Materials Processing Technology* 105 (2000) 95-109.
37. X. Deng, W. Chen and G. Shi, "Three-dimensional finite element analysis of the mechanical behavior of spot welds," *Finite Elements in Analysis and Design* 35 (2000) 17-39.
36. X. Deng and W. Chen, "Performance of shell elements in modeling spot-welded joints," *Finite Elements in Analysis and Design* 35 (2000) 41-57.

35. X. Deng and C. Shet, "Metal cutting process simulation using the finite element method," Proceedings of the 20th Southeastern Conference on Theoretical and Applied Mechanics (SECTAM-XX), Paper # MF-28 (7 pages), Pine Mountain, Georgia, 2000.
34. X. Deng and W. Chen, "Structural damping induced by friction at joint interfaces," Proceedings of the 20th Southeastern Conference on Theoretical and Applied Mechanics (SECTAM-XX), Paper # SM-27 (7 pages), Pine Mountain, Georgia, 2000.
33. M. A. Sutton, X. Deng, F. Ma, J. C. Newman, Jr., and M. James, "Development and application of a crack tip opening displacement-based mixed mode fracture criterion," *International Journal of Solids and Structures* 37 (2000) 3591-3618.
32. X. Deng and J. C. Newman, Jr., "A study of some issues in stable crack growth simulations," *Engineering Fracture Mechanics* 64 (1999) 291-304.
31. F. Ma, X. Deng, M. A. Sutton and J. C. Newman, Jr., "A CTOD-based mixed-mode fracture criterion," *Mixed-Mode Crack Behavior, ASTM STP 1359*, K. J. Miller and D. L. McDowell, Eds., American Society for Testing and Materials, West Conshohocken, PA, 1999, pp. 86-110.
30. W. Chen and X. Deng, "A finite element analysis of friction damping in a slip joint," Proceedings of the ASME (American Society of Mechanical Engineers) 1999 Design Engineering Technical Conference (DETC), Paper # VIB 8189 (7 pages), 1999.
29. Q. Wang and X. Deng, "Damage detection with spatial wavelets," *International Journal of Solids and Structures* 36 (1999) 3443-3468.
28. X. Deng and Q. Wang, "Crack detection using spatial measurements and wavelet analysis," *International Journal of Fracture* 91 (1998) L23-L28.
27. X. Deng, "Plane stress crack tip fields around a rapidly growing ductile/rigid interface crack," *International Journal of Fracture* 90 (1998) 325-240.
26. J. Liu, M. A. Sutton, J. S. Lyons, and X. Deng, "Experimental investigation of near crack tip creep deformation in alloy 800 at 650°C," *International Journal of Fracture* Vol. 91, No. 33, pp. 233-268, 1998.
25. V. Giurgiutiu, C. A. Rogers, Y. J. Chao, M. A. Sutton, and X. Deng, "Adaptive health monitoring concepts for spot-welded and weld-bonded structural joints," Proceedings of the ASME *Symposium on Adaptive Structures and Materials Systems*, AD-VOL. 54 (1997) 99-104.
24. X. Deng, "Plane stress dynamic crack growth along a ductile/rigid interface," Proceedings of the ASME *Symposium on Mechanics and Materials Aspects of Dynamic Failure*, AD-VOL. 52 (1996) 297-311.
23. L. Yang, M. A. Sutton, X. Deng, and J.S. Lyons, "Finite element modeling of creep fracture initiation in a superalloy," *International Journal of Fracture* 81 (1996) 299-320.
22. M. A. Sutton, X. Deng, J. Liu and L. Yang, "Determination of elastic-plastic stresses and strains from measured surface strain data," *Experimental Mechanics* June (1996) 99-112.
21. W. Li, X. Deng, and A. J. Rosakis, "Determination of temperature field around a rapidly moving crack tip in an elastic-plastic solid," *International Journal of Heat and Mass Transfer* 39 (1996) 677-690.

20. X. Deng, "Mechanics of debonding and delamination in composites: Asymptotic studies," *Composites Engineering* 5 (1995) 1299-1315.
19. X. Deng, "Plane strain near-tip fields for elastic-plastic interface cracks," *International Journal of Solids and Structures* 32 (1995) 1727-1741.
18. X. Deng, "The asymptotic structure of transient elastodynamic fields at the tip of a stationary crack," *Proceedings Royal Society of London A* 446 (1994) 1-13.
17. X. Deng, "A note on interface cracks with and without friction in contact zone," *ASME Journal of Applied Mechanics* 61 (1994) 994-995.
16. X. Deng, "An asymptotic analysis of stationary and moving cracks with frictional contact along bimaterial interfaces and in homogeneous solids," *International Journal of Solids and Structures* 31 (1994) 2407-2429.
15. L. Yang, X. Deng, and Y. J. Chao, "Explicit expressions of transient elastodynamic crack tip fields for mixed-mode crack propagation," *Engineering Fracture Mechanics* 48 (1994) 573-582.
14. X. Deng, A. J. Rosakis, and S. Krishnaswamy, "Dynamic crack propagation in elastic-plastic solids under non-K-dominance conditions," *European Journal of Mechanics A/Solids* 13 (1994) 327-350.
13. X. Deng, "On stationary and moving interface cracks with frictionless contact in anisotropic bimaterials," *Proceedings Royal Society of London A* 443 (1993) 563-572.
12. X. Deng, "Dynamic crack growth along elastic-plastic interfaces," *International Journal of Solids and Structures* 30 (1993) 2937-2951.
11. X. Deng, "Propagating interface cracks with frictionless contact," *Journal of the Mechanics and Physics of Solids* 41 (1993) 531-540.
10. X. Deng, "General crack tip fields for stationary and steadily growing interface cracks in anisotropic bimaterials," *ASME Journal of Applied Mechanics* 60 (1993) 183-189.
9. X. Deng, "Transient, asymptotic, elastodynamic analysis: A simple method and its application to mixed-mode crack growth," *International Journal of Solids and Structures* 30 (1993) 513-519.
8. R. Peek and X. Deng, "A new look at energy release rates for quasi-statically propagating cracks in inelastic materials," *International Journal of Fracture* 59 (1993) 151-160.
7. X. Deng, "Complete complex series expansions of near-tip fields for steadily growing interface cracks in dissimilar isotropic materials," *Engineering Fracture Mechanics* 42 (1992) 237-242.
6. X. Deng and A. J. Rosakis, "A finite element investigation of quasi-static and dynamic asymptotic crack tip fields in hardening elastic-plastic solids under plane stress; Part I: Crack growth in linear hardening materials," *International Journal of Fracture* 57 (1992) 291-308.
5. X. Deng and A. J. Rosakis, "A finite element investigation of quasi-static and dynamic asymptotic crack tip fields in hardening elastic-plastic solids under plane stress; Part II: Crack growth in power-law hardening materials," *International Journal of Fracture* 58 (1992) 137-156.

4. X. Deng and A. J. Rosakis, "Dynamic crack propagation in elastic-perfectly plastic solids under plane stress conditions," *Journal of the Mechanics and Physics of Solids* 39 (1991) 683-722.
3. X. Deng and A. J. Rosakis, "Negative plastic flow and its prevention in elasto-plastic finite element computation," *Finite Elements in Analysis and Design* 7 (1990) 181-191.
2. X. Zhang and X. Deng, "The two-dimensional generalized J-integral of mixed mode for stiffened plates," *Acta Aeronautica et Astronautica Sinica* 6 (1985) 344-350.
1. X. Deng, "Some theorems about the sum $S(N, K)=1+2^K+3^K+\dots+N^K$," published in *A Special Collection of Scientific Papers*, Beijing University of Aeronautics and Astronautics, On her 30th Anniversary, 1982.

Partially Reviewed Papers:

40. Z. Wei, X. Deng, X. Deng, and C.-S. Cheng, "Mixed-mode I/III crack growth in ductile materials; Part II: Simulations," Proceedings of the 2006 Society of Experimental Mechanics Annual Conference & Exposition on Experimental and Applied Mechanics, Saint Louis, Missouri, June 4-7, 2006.
39. J. Yan, M. A. Sutton, X. Deng, and C.-S. Cheng, "Mixed-mode I/III crack growth in ductile materials; Part I: Experiments," Proceedings of the 2006 Society of Experimental Mechanics Annual Conference & Exposition on Experimental and Applied Mechanics, Saint Louis, Missouri, June 4-7, 2006.
38. M. A. Sutton, X. Deng, W. Lan, and C.-S. Cheng, "Slant fracture in ductile materials: Investigation and prediction," Proceedings of the 9th Joint FAA/DOD/NASA Conference on Aging Aircraft, Atlanta, Georgia, 6-9 March, 2006.
37. Z. Wei, J. Yan, X. Deng, M. A. Sutton, and C.-S. Cheng, "Study of Mixed-Mode I/III Fracture in Ductile Materials," Proceedings of the 2005 SEM Annual Conference and Exposition on Experimental and Applied Mechanics, *p 1651-1655*, Portland, Oregon, June 7-9, 2005.
36. W. Lan, X. Deng, M. A. Sutton, C.-S. Cheng, "Investigation of Slant Fracture in Ductile Materials," Proceedings of the 2005 SEM Annual Conference and Exposition on Experimental and Applied Mechanics, *p 1647-1650*, Portland, Oregon, June 7-9, 2005.
35. M.A. Sutton, X. Deng and J. Zuo, "Three-dimensional Crack Growth Simulations: Computational Aspects and Application for Analysis of Crack Tunneling and Slanting," Proceedings of the 11th International Conference on Fracture, Turin, Italy, March 20-25, 2005.
34. M. A. Sutton, X. Deng, J. Zuo and W. Lan, "3D stable tearing analyses with considerations of constraint, crack tunneling, and crack slanting," Proceedings of the 8th Joint NASA/FAA/DOD Conference on Aging Aircraft, Palm Springs, California, Jan. 31-Feb. 3, 2005.
33. W. Lan, X. Deng, M.A. Sutton, J. Zuo, C. S. Cheng, "Three-dimensional finite element analysis of stable ductile fracture tests," Proceedings of the International Conference on Fracture and Damage of Advanced Materials, Hanzghou, China, Aug. 10-14, 2004.

32. M. A. Sutton, J. Zuo, X. Deng, and W. Lan, "Experiments and initial 3D fracture simulations in ductile materials," Proceedings of the SEM X International Congress & Exposition on Experimental and Applied Mechanics, Costa Mesa, California, June 7-10, 2004.
31. S. Xu and X. Deng, "Two and three dimensional finite element models for the friction stir welding process," CD-ROM Proceedings of the 4th International Symposium on Friction Stir Welding, Paper # S10B-P1 (11 pages), Park City, Utah, May 14-16, 2003.
30. D. I. Cherednichenko, R. V. Drachev, I. I. Khlebnikov, X. Deng and T. S. Sudarshan, "Thermal stress as the major factor of defect generation in SiC during PVT growth," Proceedings of the 2002 MRS (Material Research Society) Fall Meeting, Boston, M.A., Sym. Proc. Vol. 742, K2.18.1-6, December 2-6, 2002.
29. M. A. Sutton, X. Deng, J. Zuo, and E. Mahgoub, "Recent progress in 3D modeling of stable tearing crack growth," Proceedings of the 6th Joint FAA/DoD/NASA Aging Aircraft Conference, San Francisco, CA, Sept. 16-19, 2002.
28. X. Deng, "Mixed-mode fracture criterion and simulation, and crack-tip field characterization," Proceedings of the 2002 National Solid Mechanics Conference of China, Dalian, China, Aug. 19-21, 2002.
27. J. Zuo, M. A. Sutton, and X. Deng, "A model for failure initiation in ductile materials," Proceedings of the 14th U.S. National Congress of Theoretical and Applied Mechanics, Virginia Tech, Blacksburg, VA, June 23-28, 2002.
26. J. Zuo, M. A. Sutton, and X. Deng, "A unit-cell based micro-mechanics study of ductile failure by void growth," Proceedings of the 2002 Society for Experimental Mechanics Annual Conference & Exposition on Experimental and Applied Mechanics, Milwaukee, Wisconsin, June 10-12, 2002.
25. X. Deng, E. Mahgoub, and M. A. Sutton, "A three-dimensional analysis of slant fracture in ductile materials," Proceedings of the 2002 Society for Experimental Mechanics Annual Conference & Exposition on Experimental and Applied Mechanics, Milwaukee, Wisconsin, June 10-12, 2002.
24. Deng, X., Khan, J., Reynolds, A. P., Xu, S., Khandkar, M. Z. H., and Seidel, T. U., "Thermomechanical Analyses of the Friction Stir Welding Process," Proceedings of the 2002 NSF Design, Service, and Manufacturing Grantees and Research Conference, San Juan, Puerto Rico, Jan. 7-10, 2002.
23. X. Deng, M. A. Sutton, J. Zuo, and L. Wang, "Mixed-mode fracture analysis of airframe materials," Proceedings of the 5th Joint NASA/FAA/DoD Conference on Aging Aircraft, Kissimmee, FL, Sept. 10-13, 2001.
22. X. Deng, M. A. Sutton, and F. Ma, "Recent advances in mixed mode fracture characterization of airframe materials," Proceedings of the 2001 Society for Experimental Mechanics Annual Conference & Exposition on Experimental and Applied Mechanics, Portland, Oregon, June 4-6, 2001.
21. A. P. Reynolds, X. Deng, and J. Khan, "Development of coupled thermal, mechanical, and material transport models of the friction stir welding process," Proceedings of the 2001 NSF Design, Manufacturing and Industrial Innovation Research Conference, Tampa, FL, January 7-10, 2001.

20. M. A. Sutton, F. Ma, X. Deng and S. Fawaz, "The basis of crack opening displacement fracture criteria for predicting mixed mode I/II crack initiation and growth in thin sheet materials," Proceedings of the 4th Joint DoD/FAA/NASA Conference on Aging Aircraft (CAA00), St. Louis, Missouri, May 15-18, 2000.
19. A. P. Reynolds, X. Deng, T. Seidel, and S. Xu, "Recent advances in FSW process physics", Proceedings of the International Symposium on Joining of Advanced Materials, pp. 172-177, ASM International Materials Solutions Conference, St. Louis, Missouri, October 9-12, 2000.
18. F. Ma, M. Sutton, X. Deng, and J. C. Newman, Jr., "Mixed mode crack-tip fields characterization by a stress triaxiality parameter and a characteristic length," Proceedings of the 3rd Joint NASA/FAA/DoD Conference on Aging Aircraft, Albuquerque, New Mexico, 18 pages, Sept. 20-23, 1999.
17. F. Ma, X. Deng, and M. A. Sutton, "Oxygen embrittlement of some metals at elevated temperatures," Proceedings of the 13th ASCE (American Society of Civil Engineers) Engineering Mechanics Division Conference, Paper # FMA2 (5 pages), 1999.
16. X. Deng and W. Chen, "Mechanics of spot-welded structural joints," Proceedings of the 13th ASCE (American Society of Civil Engineers) Engineering Mechanics Division Conference, Paper # DENG2 (6 pages), 1999.
15. F. Ma, X. Deng, M. A. Sutton, J. C. Newman, Jr., "A crack kinking/curving criterion and its application to crack growth prediction under mixed mode loading conditions," Proceedings of the 13th ASCE (American Society of Civil Engineers) Engineering Mechanics Division Conference, Paper # FMA1 (6 pages), 1999.
14. X. Deng and J. C. Newman, Jr., "Finite element techniques for crack growth simulations," Proceedings of the 13th ASCE (American Society of Civil Engineers) Engineering Mechanics Division Conference, Paper # DENG1 (4 pages), 1999.
13. X. Deng and W. Chen, "A three-dimensional analysis of spot-welded structural joints," Proceedings of the 1999 SEM (Society for Experimental Mechanics) Annual Conference, pp. 803-806, 1999.
12. X. Deng and V. Giurgiutiu, "Impact monitoring and fault detection using piezoelectric transducers and wavelet analysis," *Failure Analysis: A Foundation for Diagnostics and Prognostics Development*, Proceedings of the 53rd Meeting of the Society for Machinery Failure Prevention Technology (MFPT), pp. 167-172, 1999.
11. X. Deng, Quan Wang and V. Giurgiutiu, "Structural health monitoring using active sensors and wavelet transforms," Proceedings of SPIE's 6th Annual International Symposium on Smart Structures and Materials, Paper # 3667-35 (8 pages), 1999.
10. M. A. Sutton, X. Deng, F. Ma and J. C. Newman, Jr., "A mixed-mode I/II fracture criterion and its application in prediction of crack growth," Proceedings of the 2nd Joint NASA/FAA/DoD Conference on Aging Aircraft, NASA/CP-1999-208982/PART2 (1999) 575-583.
9. X. Deng, F. Ma and M. A. Sutton, "A phenomenological theory for oxygen embrittlement of superalloys at elevated temperatures," *Applied Mechanics in the Americas*, Proceedings of the Sixth Pan American Congress of Applied Mechanics (PACAM VI), Vol. 7, pp. 867-870, 1999.

8. X. Deng, F. Ma, M. A. Sutton and J. C. Newman, "A crack-tip opening displacement-based mixed-mode fracture criterion," *Applied Mechanics in the Americas*, Proceedings of the Sixth Pan American Congress of Applied Mechanics (PACAM VI), Vol. 7, pp. 831-834, 1999.
7. Bruck, H.A., Schreier, H.W., Sutton, M.A., Chao, Y.-J., Deng, X., and Davoud, M., "Distortions in GMAW of Thin Plates: Temperature and 3-D Deformation Measurements Using High-Speed Thermal Imaging and Stereoscopic Video Imaging," ASM Proceedings of the International Conference: Trends in Welding Research, p 967-971, 1998.
6. X. Deng, Q. Wang, C. A. Rogers, V. Giurgiutiu, and M. A. Sutton, "Damage detection methods based on wavelet analyses of sensor signals," Proceedings of the Workshop on Intelligent NDE Sciences for Aging and Futuristic Aircraft (1997) 37-45.
5. X. Deng, C. A. Rogers, V. Giurgiutiu, and M. A. Sutton, "Rotor blade damage and deterioration detection through the wavelet transform method," Proceedings of the Third ARO Workshop on Smart Structures, 6 pages, 1997.
4. X. Deng and J. C. Newman, Jr., "Implementation and application of a large-rotation finite element formulation in NASA code ZIP2DL," Proceedings of the FAA-NASA Symposium on Continued Airworthiness of Aircraft Structures, DOT/FAA/AR-97/2, Vol. II (1997) 377-390.
3. M. A. Sutton, W. Zhao, X. Deng, D. S. Dawicke and J. C. Newman, Jr., "Numerical investigations into the viability of CTOD as a fracture parameter for mixed-mode I/II tearing of thin aluminum sheets," Proceedings of the FAA-NASA Symposium on Continued Airworthiness of Aircraft Structures, DOT/FAA/AR-97/2, Vol. II (1997) 461-472.
2. X. Deng and J.C. Newman, Jr., "ZIP2DL - An elastic-plastic, large-rotation finite element stress analysis and crack-growth simulation program," NASA Technical Memorandum 110332, NASA Langley Research Center, Hampton, Virginia, April 1997.
1. X. Zhang and X. Deng, "The two-dimensional generalized J-integral of mixed mode for stiffened plates," *Proceedings of the Chendu Symposium on Fracture Mechanics*, September, 1984, Chendu, the People's Republic of China.

Conference Presentations:

126. Z. Wei, X. Deng, M.A. Sutton, P. Zavattieri, C.-S. Cheng, "Crack growth in ductile thin sheets under local mixed-mode I/II/III conditions," accepted for presentation at the ASME International Mechanical Engineering Congress and Exposition (IMECE 2008), Boston, Massachusetts, Oct. 31-Nov. 6, 2008.
125. S. Xu, V. Tiwari, X. Deng, M.A. Sutton, W.F. Fournery, D. Bretall, "Identification of impact pressure loading using inverse methods," accepted for presentation at the ASME International Mechanical Engineering Congress and Exposition (IMECE 2008), Boston, Massachusetts, Oct. 31-Nov. 6, 2008.
124. S. Xu, V. Tiwari, X. Deng, M.A. Sutton, W.F. Fournery, D. Bretall, "An inverse approach to impact and explosive loading identification," accepted for presentation at the 2008

- Society of Experimental Mechanics International Congress & Exposition on Experimental and Applied Mechanics, Orlando, Florida, June 2-5, 2008.
123. M.A. Sutton, X. Deng, H. Yang, J. Zuo and D.S. Dawicke, "Curvilinear crack growth methods for metallic materials," presentation at the Damage Science Team Meeting, NASA Langley Research Center, Hampton, Virginia, Jan. 28-29, 2008.
 122. Z. Wei, X. Deng, M. A. Sutton, Pablo Zavattieri and C.-S. Cheng, "Simulation and prediction of crack growth in ductile thin sheets subjected to combined in-plane and out-of-plane loading," accepted for presentation at the 8th International conference on Fundamentals of Fracture (ICFF VIII), Hong Kong and Guangzhou, January 3-7, 2008.
 121. J. Zuo, X. Deng and M. A. Sutton, "Software development for 3D nonlinear mixed-mode crack growth simulations," presentation at the 8th International conference on Fundamentals of Fracture (ICFF VIII), Hong Kong and Guangzhou, January 3-7, 2008.
 120. X. Deng and S. Xu, "Molecular dynamics simulations of nano-scale fracture in a single crystal," presentation at the 43rd Annual Technical Meeting, the Society of Engineering Science, University Park, Pennsylvania, Aug. 13-16, 2006.
 119. X. Deng, M. A. Sutton, J. Yan, Z. Wei, and C.-S. Cheng, "Crack growth in ductile materials with large out-of-plane deformation: Experiments and simulations," invited 50-minute keynote presentation at the symposium Recent Advances in Fracture and Fatigue, the 43rd Annual Technical Meeting, the Society of Engineering Science, University Park, Pennsylvania, Aug. 13-16, 2006.
 118. Z. Wei, X. Deng, X. Deng, and C.-S. Cheng, "Mixed-mode I/III crack growth in ductile materials; Part II: Simulations," presentation at the 2006 Society of Experimental Mechanics Annual Conference & Exposition on Experimental and Applied Mechanics, Saint Louis, Missouri, June 4-7, 2006.
 117. J. Yan, M. A. Sutton, X. Deng, and C.-S. Cheng, "Mixed-mode I/III crack growth in ductile materials; Part I: Experiments," presentation at the 2006 Society of Experimental Mechanics Annual Conference & Exposition on Experimental and Applied Mechanics, Saint Louis, Missouri, June 4-7, 2006.
 116. M. A. Sutton, X. Deng, W. Lan, and C.-S. Cheng, "Slant fracture in ductile materials: Investigation and prediction," Presentation at the 9th Joint FAA/DOD/NASA Conference on Aging Aircraft, Atlanta, Georgia, 6-9 March, 2006.
 115. S. Xu and X. Deng, "Atomistic modeling of nano-multilayered composites," presentation at the 8th US National Congress on Computational Mechanics, University of Texas, Austin, Texas, July 25-27, 2005.
 114. X. Deng and M. A. Sutton, "Experiments, analysis and simulation of mixed mode ductile fracture," Presentation at the 2005 ASME PVP Conference, Denver, Colorado, July 17-21, 2005.
 113. S. Xu and X. Deng, "An atomistic study of ductile fracture in a single crystal," presentation at the 3rd MIT Conference on Computational Fluid and Solid Mechanics, MIT, Cambridge, Massachusetts, June 14-17, 2005.
 112. X. Deng and M. A. Sutton, "A review of advances in mixed mode ductile fracture," presentation at the 3rd MIT Conference on Computational Fluid and Solid Mechanics, MIT, Cambridge, Massachusetts, June 14-17, 2005.

111. Y.Z. Ge, M.A. Sutton, X. Deng, A.P. Reynolds, "Limited weld residual stress measurements in fatigue: Part I: Complete Field Representation Through Equilibrium Smoothing," presentation at the 2005 Society of Experimental Mechanics Annual Conference & Exposition on Experimental and Applied Mechanics, Portland, Oregon, June 7-9, 2005.
110. M.A. Sutton, A.P. Reynolds, Y.Z. Ge, X. Deng, "Limited Weld Residual Stress Measurements in Fatigue: Part II: Fatigue in Friction Stir Welded Aluminum," presentation at the 2005 Society of Experimental Mechanics Annual Conference & Exposition on Experimental and Applied Mechanics, Portland, Oregon, June 7-9, 2005.
109. Z. Wei, J. Yan, X. Deng, M. A. Sutton, and C.-S. Cheng, "Study of Mixed-Mode I/III Fracture in Ductile Materials," presentation at the 2005 Society of Experimental Mechanics Annual Conference & Exposition on Experimental and Applied Mechanics, Portland, Oregon, June 7-9, 2005.
108. W. Lan, X. Deng, M. A. Sutton, C.-S. Cheng, "Investigation of Slant Fracture in Ductile Materials," presentation at the 2005 Society of Experimental Mechanics Annual Conference & Exposition on Experimental and Applied Mechanics, Portland, Oregon, June 7-9, 2005.
107. S. Xu and X. Deng, "Stress, interfacial structure and material behavior of FCC nanomultilayered composites," presentation at the 2005 Joint ASME/ASCE/SES Conference on Mechanics and Materials, Baton Rouge, Louisiana, June 1-3, 2005.
106. M.A. Sutton, X. Deng and J. Zuo, "Three-dimensional Crack Growth Simulations: Computational Aspects and Application for Analysis of Crack Tunneling and Slanting," presentation at the 11th International Conference on Fracture, Turin, Italy, March 20-25, 2005.
105. M. A. Sutton, X. Deng, J. Zuo and W. Lan, "3D stable tearing analyses with considerations of constraint, crack tunneling, and crack slanting," presentation at the 8th Joint NASA/FAA/DOD Conference on Aging Aircraft, Palm Springs, California, Jan. 31-Feb. 3, 2005.
104. J. Zuo, X. Deng, M. A. Sutton, "Computational aspects of three-dimensional crack growth simulation," presentation at the 2004 ASME International Mechanical Engineering Congress and Exposition, Anaheim, California, Nov. 13-19, 2004.
103. J. Zuo, X. Deng, M. A. Sutton, and C.-S. Cheng, "Crack tunneling: Effect of stress constraint," presentation at the 2004 ASME International Mechanical Engineering Congress and Exposition, Anaheim, California, Nov. 13-19, 2004.
102. W. Lan, X. Deng, M.A. Sutton, J. Zuo, C. S. Cheng, "Three-dimensional finite element analysis of stable ductile fracture tests," presented at the International Conference on Fracture and Damage of Advanced Materials, Hanzghou, China, Aug. 10-14, 2004.
101. M. A. Sutton, J. Zuo, X. Deng, and W. Lan, "Experiments and initial 3D fracture simulations in ductile materials," presented at the SEM X International Congress & Exposition on Experimental and Applied Mechanics, Costa Mesa, California, June 7-10, 2004.

100. J. Harter, M. A. Sutton, X. Deng, J. Zuo, W. Lan, E. Mahgoub, "Recent progress in 3D modeling of crack turning and stable tearing," presentation at the 5th Industry Wide Unitized Structure Technical Interchange, New Orleans, Louisiana, Sept. 11-13, 2003.
99. S. Xu and X. Deng, "Friction-stir welding: Process modeling and simulation," presentation at the 40th Annual Technical Meeting, the Society of Engineering Science, October 12-15, 2003, the University of Michigan, Ann Arbor, MI.
98. X. Deng, M. A. Sutton, W. Lan, J. Zuo, E. Mahgoub, and C.-S. Cheng, "Mixed-mode stable tearing fracture under combined tension/torsion loading," presentation at the 40th Annual Technical Meeting, the Society of Engineering Science, October 12-15, 2003, the University of Michigan, Ann Arbor, MI.
97. M. S. Davoud and X. Deng, "A comparison between three- and two-dimensional thermal finite element analysis of gas metal arc welding process," presented at *the 2003 ASME International Mechanical Engineering Congress & Exposition (IMECE 2003)*, Washington, D. C., Nov. 16-21, 2003.
96. X. Deng, "Solid mechanics-based simulation of the friction stir welding process," invited presentation at the Symposium on Contemporary Research in Solid and Structural Mechanics, California Institute of Technology, Pasadena, CA, Nov. 14, 2003.
95. S. Xu and X. Deng, "Two and three dimensional finite element models for the friction stir welding process," presented at the 4th International Symposium on Friction Stir Welding, Park City, Utah, May 14-16, 2003.
94. D. I. Cherednichenko, R. V. Drachev, I. I. Khlebnikov, X. Deng and T. S. Sudarshan, "Thermal stress as the major factor of defect generation in SiC during PVT growth," presented at the 2002 MRS (Material Research Society) Fall Meeting, Boston, M.A., December 2-6, 2002.
93. M. A. Sutton, X. Deng, J. Zuo, and E. Mahgoub, "Recent progress in 3D modeling of stable tearing crack growth," presented at the 6th Joint FAA/DoD/NASA Aging Aircraft Conference, San Francisco, CA, Sept. 16-19, 2002.
92. X. Deng, "Mixed-mode fracture criterion and simulation, and crack-tip field characterization," invited presentation at the 2002 National Solid Mechanics Conference of China, Dalian, China, Aug. 19-21, 2002.
91. X. Deng, E. Mahgoub, and M. A. Sutton, "Analysis of slant fracture in specimens under nominal Mode I loading conditions," presented at the 14th U.S. National Congress of Theoretical and Applied Mechanics, Virginia Tech, Blacksburg, VA, June 23-28, 2002.
90. J. Zuo, M. A. Sutton, and X. Deng, "A model for failure initiation in ductile materials," presented at the 14th U.S. National Congress of Theoretical and Applied Mechanics, Virginia Tech, Blacksburg, VA, June 23-28, 2002.
89. X. Deng and S. Xu, "Friction-stir welding process simulation: Material flow and microstructure issues," presented at the 14th U.S. National Congress of Theoretical and Applied Mechanics, Virginia Tech, Blacksburg, VA, June 23-28, 2002.
88. J. Zuo, M. A. Sutton, and X. Deng, "A unit-cell based micro-mechanics study of ductile failure by void growth," presented at the 2002 Society for Experimental Mechanics Annual Conference & Exposition on Experimental and Applied Mechanics, Milwaukee, Wisconsin, June 10-12, 2002.

87. X. Deng, E. Mahgoub, and M. A. Sutton, "A three-dimensional analysis of slant fracture in ductile materials," presented at the 2002 Society for Experimental Mechanics Annual Conference & Exposition on Experimental and Applied Mechanics, Milwaukee, Wisconsin, June 10-12, 2002.
86. E. Mahgoub, X. Deng, and M. A. Sutton, "Stress and deformation fields around a slant crack," presented at the 21st Southeastern Conference on Theoretical and Applied Mechanics (SECTAM XXI), Orlando, Florida, May 19-21, 2002.
85. S. Xu and X. Deng, "A three-dimensional model for the friction-stir welding process," presented the 21st Southeastern Conference on Theoretical and Applied Mechanics (SECTAM XXI), Orlando, Florida, May 19-21, 2002.
84. Deng, X., Khan, J., Reynolds, A. P., Xu, S., Khandkar, M. Z. H., and Seidel, T. U., "Thermomechanical Analyses of the Friction Stir Welding Process," presented at the 2002 NSF Design, Service, and Manufacturing Grantees and Research Conference, San Juan, Puerto Rico, Jan. 7-10, 2002.
83. A. T. Zehnder, Y. K. Potdar, X. Deng, and C. Shet, "An experimental and computational study of temperature and strain fields in metal cutting," presented at the 2001 International Mechanical Engineering Conference and Exposition (IMECE 2001), New York Hilton Hotel & Towers and Sheraton New York Hotel & Towers, New York, NY, November 11-16, 2001.
82. X. Deng, M. A. Sutton, J. Zuo, and L. Wang, "Mixed-mode fracture analysis of airframe materials," presented at the 5th Joint NASA/FAA/DoD Conference on Aging Aircraft, Kissimmee, FL, Sept. 10-13, 2001.
81. X. Deng and S. Xu, "Finite element simulation of the friction-stir welding process," presented at the 6th U. S. National Congress on Computational Mechanics, Dearborn, Michigan, August 1-3, 2001.
80. X. Deng, L. Wang, and M. A. Sutton, "Mixed-mode crack growth simulation," presented at the 6th U. S. National Congress on Computational Mechanics, Dearborn, Michigan, August 1-3, 2001.
79. M. A. Sutton, F. Ma, X. Deng, and J. C. Newman, Jr., "Mixed mode I/II crack-tip stress fields characterized by a triaxial stress parameter and a plastic deformation extent based characteristic length," presented at the 33rd Symposium on Fatigue and Fracture Mechanics, Jackson Lake Lodge, Jackson Hole, WY, Jun 26-29, 2001.
78. X. Deng, M. A. Sutton, and F. Ma, "Recent advances in mixed mode fracture characterization of airframe materials," presented at the 2001 Society for Experimental Mechanics Annual Conference & Exposition on Experimental and Applied Mechanics, Portland, Oregon, June 4-6, 2001.
77. X. Deng and S. Xu, "Solid mechanics simulation of friction stir welding process," presented at the 29th North American Manufacturing Research Conference, University of Florida, Gainesville, FL, May 22-25, 2001.
76. A. P. Reynolds, X. Deng, and J. Khan, "Development of coupled thermal, mechanical, and material transport models of the friction stir welding process," presented at the 2001 NSF Design, Manufacturing and Industrial Innovation Research Conference, Tampa, FL, January 7-10, 2001.

75. A. P. Reynolds, X. Deng, T. Seidel, and S. Xu, "Recent advances in FSW process physics", presented at the International Symposium on Joining of Advanced Materials, ASM International Materials Solutions Conference, St. Louis, Missouri, October 9-12, 2000.
74. X. Deng and W. Chen, "Modeling of Dynamic Effects in Frictional Damping at Mechanical Interfaces," presented at the 37th Society of Engineering Science Annual Technical Meeting (SES 2000), University of South Carolina, Columbia, SC, Oct. 23-25, 2000.
73. M. A. Sutton, F. Ma, and X. Deng, "Mixed Mode I/II Crack-Tip Stress Fields," presented at the 37th Society of Engineering Science Annual Technical Meeting (SES 2000), University of South Carolina, Columbia, SC, Oct. 23-25, 2000.
72. M. S. Davoud and X. Deng, "A comparison between three and two-dimensional thermomechanical analysis of Gas Metal Arc Welding process," presented at the 37th Society of Engineering Science Annual Technical Meeting (SES 2000), University of South Carolina, Columbia, SC, Oct. 23-25, 2000.
71. X. Deng and S. Xu, "Solid Mechanics Based Finite Element Simulation of Material Flow in Friction Stir Welding," presented at the 37th Society of Engineering Science Annual Technical Meeting (SES 2000), University of South Carolina, Columbia, SC, Oct. 23-25, 2000.
70. X. Deng, C. Shet, and A. E. Bayoumi, "A Finite Element Study of Water Jet Assisted Orthogonal Metal Cutting," presented at the 37th Society of Engineering Science Annual Technical Meeting (SES 2000), University of South Carolina, Columbia, SC, Oct. 23-25, 2000.
69. F. Ma, M. A. Sutton, and X. Deng, "Mixed mode I/II crack-tip stress fields," presented at the 20th International Congress of Theoretical and Applied Mechanics (ICTAM 2000), Chicago, August 27-September 2, 2000.
68. X. Deng and C. Shet, "A finite element analysis of residual stresses and strains in orthogonal metal cutting," presented at the 20th International Congress of Theoretical and Applied Mechanics (ICTAM 2000), Chicago, August 27-September 2, 2000.
67. A. Zehnder, Y. Potdar, and X. Deng, "Measurement and simulation of temperature and strain fields in orthogonal metal cutting," presented at the 20th International Congress of Theoretical and Applied Mechanics (ICTAM 2000), Chicago, August 27-September 2, 2000.
66. X. Deng and W. Chen, "A finite element study of energy dissipation and structural damping at joint interfaces," presented at the 8th Conference on Nonlinear Vibrations, Stability, and Dynamics of Structures, Virginia Tech, Blacksburg, VA, July 23-27, 2000.
65. M. A. Sutton, F. Ma, X. Deng and S. Fawaz, "The basis of crack opening displacement fracture criteria for predicting mixed mode I/II crack initiation and growth in thin sheet materials," presented at the 4th Joint DoD/FAA/NASA Conference on Aging Aircraft (CAA00), St. Louis, Missouri, May 15-18, 2000.
64. X. Deng and W. Chen, "Finite element modeling of contact, friction, and energy dissipation at jointed interfaces," invited presentation at The Workshop on the Modeling

- and Simulation of Structures with Jointed Interfaces, Albuquerque, New Mexico, April 25-26, 2000.
63. M. S. Davoud and X. Deng, "Finite element simulation and model validation of gas metal arc welding process," presented at the 20th Southeastern Conference on Theoretical and Applied Mechanics (SECTAM-XX), Callaway Gardens, Pine Mountain, Georgia, April 16-18, 2000.
 62. X. Deng and C. Shet, "Metal cutting process simulation using the finite element method," presented at the 20th Southeastern Conference on Theoretical and Applied Mechanics (SECTAM-XX), Callaway Gardens, Pine Mountain, Georgia, April 16-18, 2000.
 61. X. Deng and W. Chen, "Structural damping induced by friction at joint interfaces," presented at the 20th Southeastern Conference on Theoretical and Applied Mechanics (SECTAM-XX), Callaway Gardens, Pine Mountain, Georgia, April 16-18, 2000.
 60. X. Deng, "Impact monitoring, identification, and evaluation for space structures," presented at the SC NASA EPSCoR Workshop for Aerospace and Materials, U. of South Carolina, Columbia, SC, Feb. 24-25, 2000.
 59. X. Deng and M. A. Sutton, "3-D crack growth simulation technology for aerospace structures," presented at the SC NASA EPSCoR Workshop for Aerospace and Materials, U. of South Carolina, Columbia, SC, Feb. 24-25, 2000.
 58. J. A. Khan, A. E. Bayoumi, and X. Deng, "Non-traditional machining using high pressure waterjet for aerospace application," presented at the SC NASA EPSCoR Workshop for Aerospace and Materials, U. of South Carolina, Columbia, SC, Feb. 24-25, 2000.
 57. M. A. Sutton, F. Ma, and X. Deng, "Experimental and analytical studies for mixed-mode fracture characterization," presented at the 36th Annual Technical Meeting of the Society of Engineering Science, U. of Texas, Austin, Texas, Oct. 25-27, 1999.
 56. X. Deng and W. Chen, "Characterization of structural damping due to microslip at frictional interfaces," presented at the 36th Annual Technical Meeting of the Society of Engineering Science, U. of Texas, Austin, Texas, Oct. 25-27, 1999.
 55. X. Deng and C. Shet, "Finite element simulations of orthogonal metal cutting with focus on residual stress formation," presented at the 36th Annual Technical Meeting of the Society of Engineering Science, U. of Texas, Austin, Texas, Oct. 25-27, 1999.
 54. F. Ma, M. Sutton, X. Deng, and J. C. Newman, Jr., "Mixed mode crack-tip fields characterization by a stress triaxiality parameter and a characteristic length," presented at the 3rd Joint NASA/FAA/DoD Conference on Aging Aircraft, Albuquerque, New Mexico, Sept. 20-23, 1999.
 53. W. Chen and X. Deng, "A finite element analysis of friction damping in a slip joint," invited presentation at the ASME (American Society of Mechanical Engineers) 1999 Design Engineering Technical Conference (DETC), Las Vegas, Nevada, Sept. 12-15, 1999.
 52. F. Ma, X. Deng, and M. A. Sutton, "Oxygen embrittlement of some metals at elevated temperatures," presented at the 13th ASCE (American Society of Civil Engineers) Engineering Mechanics Division Conference, the Johns Hopkins University, Baltimore, Maryland, June 13-16, 1999.

51. X. Deng and W. Chen, "Mechanics of spot-welded structural joints," presented at the 13th ASCE (American Society of Civil Engineers) Engineering Mechanics Division Conference, the Johns Hopkins University, Baltimore, Maryland, June 13-16, 1999.
50. F. Ma, X. Deng, M. A. Sutton, J. C. Newman, Jr., "A crack kinking/curving criterion and its application to crack growth prediction under mixed mode loading conditions," presented at the 13th ASCE (American Society of Civil Engineers) Engineering Mechanics Division Conference, the Johns Hopkins University, Baltimore, Maryland, June 13-16, 1999.
49. X. Deng and J. C. Newman, Jr., "Finite element techniques for crack growth simulations," presented at the 13th ASCE (American Society of Civil Engineers) Engineering Mechanics Division Conference, the Johns Hopkins University, Baltimore, Maryland, June 13-16, 1999.
48. X. Deng and W. Chen, "A three-dimensional analysis of spot-welded structural joints," invited presentation at the 1999 SEM (Society for Experimental Mechanics) Annual Conference, Cincinnati, Ohio, June 7-9, 1999.
47. X. Deng and W. Chen, "Analysis of failure mode transition in spot welds," accepted for presentation at the 27th North American Manufacturing Research Conference, University of California, Berkeley, California, May 25-28, 1999.
46. X. Deng and V. Giurgiutiu, "Impact monitoring and fault detection using piezoelectric transducers and wavelet analysis," invited presentation at the 53rd Meeting of the Society for Machinery Failure Prevention Technology (MFPT), Virginia Beach, Virginia, April 19-22, 1999.
45. X. Deng and W. Chen, "Stress analysis of spot-welded joints," invited presentation at the 1999 AWS (American Welding Society) Annual Conference, April 12-15, 1999, St. Louis, Missouri.
44. X. Deng, Quan Wang and V. Giurgiutiu, "Structural health monitoring using active sensors and wavelet transforms," presented at SPIE's 6th Annual International Symposium on Smart Structures and Materials, March 1-5, 1999, Newport Beach, California.
43. X. Deng, F. Ma and M. A. Sutton, "A phenomenological theory for oxygen embrittlement of superalloys at elevated temperatures," presented at the Sixth Pan American Congress of Applied Mechanics (PACAM VI), Jan. 4-8, 1999, Rio de Janeiro, Brazil.
42. X. Deng, F. Ma, M. A. Sutton and J. C. Newman, "A crack-tip opening displacement-based mixed-mode fracture criterion," presented at the Sixth Pan American Congress of Applied Mechanics (PACAM VI), Jan. 4-8, 1999, Rio de Janeiro, Brazil.
41. X. Deng, F. Ma and M. A. Sutton, "A phenomenological theory for stress-accelerated grain-boundary oxygen embrittlement of superalloys at elevated temperatures," accepted for presentation at the 35th Annual Technical Meeting of the Society of Engineering Science, Sept. 27-30, 1998, Washington State University, Pullman, Washington.
40. M. A. Sutton, X. Deng, F. Ma and J. C. Newman, Jr., "A mixed-mode I/II fracture criterion and its application in prediction of crack growth," presented at the 2nd Joint

- NASA/FAA/DoD Conference on Aging Aircraft, August 31-September 3, 1998, Williamsburg, Virginia.
39. X. Deng, F. Ma, M. A. Sutton and J. C. Newman, Jr., "Mixed-mode fracture criteria based on Crack-tip opening displacements," presented at the 13th U.S. National Congress of Applied Mechanics, June 21-26, 1998, the University of Florida, Gainesville, Florida.
 38. F. Ma, X. Deng and M. A. Sutton, "Modeling oxygen embrittlement of superalloys at elevated temperatures," presented at the 13th U.S. National Congress of Applied Mechanics, June 21-26, 1998, the University of Florida, Gainesville, Florida.
 37. H. A. Bruck, M. Davoud, H. Schreier, M. A. Sutton, X. Deng and Y. J. Chao, "Buckling in gas arc welded plates: model verification and curvature measurements using high-speed infrared thermal imaging and stereoscopic video imaging," presented at the 5th International Conference on Trends in Welding Research, June 1-5, 1998, Callaway Gardens Resort, Pine Mountain, Georgia.
 36. F. Ma, X. Deng, M. A. Sutton and J. C. Newman, Jr., "A criterion for mixed-mode I/II crack initiation and growth in thin 2024-T3 aluminum plate," presented at the Symposium on Mixed-Mode Crack Behavior, ASTM, May 6-7, 1998, Atlanta, Georgia.
 35. X. Deng, V. Giurgiutiu, M. A. Sutton and C. A. Rogers, "Damage detection using active sensors and wavelet transform," invited presentation at the ARO/ARL Mini-Workshop on Damage Detection and Health Monitoring, organized by Army Research Office and Army Research Laboratory, April 28, 1998, Army Research Laboratory at the Aberdeen Proving Ground, Aberdeen, Maryland.
 34. F. Ma, X. Deng, M. A. Sutton and J. C. Newman, Jr., "Foundation for a CTOD-based mixed-mode fracture criterion," invited presentation at the NASA Airframe Structural Integrity Program Meeting, March 23-24, 1998, NASA Langley Research Center, Hampton, Virginia.
 33. X. Deng and J. C. Newman, Jr., "Moving plane strain core options in the crack-growth simulation code ZIP2DL," invited presentation at the NASA Airframe Structural Integrity Program Meeting, March 23-24, 1998, NASA Langley Research Center, Hampton, Virginia.
 32. X. Deng, Q. Wang, C. A. Rogers, V. Giurgiutiu and M. A. Sutton, "Damage detection methods based on wavelet analyses of sensor signals," presented at the FAST Workshop on Intelligent NDE Sciences for Aging and Futuristic Aircraft, Sept. 30-Oct. 2, 1997, the University of Texas at El Paso, Texas.
 31. X. Deng, C. A. Rogers, V. Giurgiutiu and M. A. Sutton, "Rotor blade damage and deterioration detection through the wavelet transform method," presented at the 3rd ARO Workshop on Smart Structures, Aug. 27-29, 1997, Virginia Tech, Blacksburg, Virginia.
 30. J. Lyons, J. Liu, M. Sutton and X. Deng, "Near crack tip creep deformation measurements in alloy 800 at 650°C," Joint ASM-TMS Materials Week '97, Sept. 15-18, 1997, Indianapolis, Indiana.
 29. V. Giurgiutiu, C. A. Rogers, Y. J. Chao, M. A. Sutton and X. Deng, "Adaptive health monitoring concepts for spot-welded and weldbonded structural joints," presentation at the Symposium on Adaptive Structures and Materials Systems, 1997 ASME International Mechanical Engineering Congress & Exposition, Nov. 16-21, Dallas, Texas.

28. X. Deng and J. C. Newman, Jr., "Crack growth simulation with a mixed-state-of-stress approach: A comparison of effects of moving and fixed plane strain cores," presentation at the Fourth US National Congress on Computational Mechanics, Aug. 6 - 8, 1997, San Francisco, California.
27. X. Deng, M. A. Sutton and J. C. Newman, Jr., "Simulation and analysis of mixed-mode stable crack growth in elastic-plastic thin sheets," presentation at the 1997 Joint ASME/ASCE/SES Summer Meeting, June 29-July 2, 1997, Northwestern University, Evanston, Illinois.
26. M. S. Davoud and X. Deng, "Experiments and modeling of transient heat transfer in gas metal arc welding," presentation at the 1997 Joint ASME/ASCE/SES Summer Meeting, June 29-July 2, 1997, Northwestern University, Evanston, Illinois.
25. X. Deng and M. S. Davoud, "Finite element studies of gas metal arc welding: A comparison of two- and three-dimensional models," presentation at the 1997 Joint ASME/ASCE/SES Summer Meeting, June 29-July 2, 1997, Northwestern University, Evanston, Illinois.
24. G. Shi and X. Deng, "Finite element simulations of orthogonal metal cutting processes," presentation at the 1997 Joint ASME/ASCE/SES Summer Meeting, June 29-July 2, 1997, Northwestern University, Evanston, Illinois.
23. X. Deng and J. C. Newman, Jr., "ZIP2DL: A finite element code for stress analysis and crack growth simulation," *invited presentation* at the NASA Airframe Structural Integrity Program Meeting, April 17-18, 1997, NASA Langley Research Center, Hampton, Virginia.
22. F. Ma, X. Deng, M. A. Sutton, M. Boone, and W. Zhao, "Modeling of mixed mode crack initiation," *invited presentation* at the NASA Airframe Structural Integrity Program Meeting, April 17-18, 1997, NASA Langley Research Center, Hampton, Virginia.
21. X. Deng, "Plane stress dynamic crack growth along a ductile/rigid interface," *invited presentation* at the Symposium on Fracture Mechanics for Ductile Materials, 1996 ASME International Mechanical Engineering Congress & Exposition, Nov. 17-22, 1996, Atlanta, Georgia.
20. X. Deng, M. A. Sutton, L. Yang, and L. Sun, "Finite Element Studies of Creep Fracture of a Power-Law Creep Superalloy," presentation at the 33rd Annual Technical Meeting of the Society of Engineering Science, Oct. 20-23, 1996, Arizona State University, Tempe, Arizona.
19. M. A. Sutton, W. Zhao, X. Deng, D.S. Dawicke and J. C. Newman, Jr., "Numerical investigations into the viability of CTOD as a fracture parameter for mixed-mode I/II tearing of thin aluminum sheets," presentation at the FAA-NASA Symposium on Continued Airworthiness of Aircraft Structures, Aug. 28-30, 1996, Atlanta, Georgia.
18. X. Deng and J. C. Newman, Jr., "Implementation and application of a large-rotation finite element formulation in NASA code ZIP2DL," presentation at the FAA-NASA Symposium on Continued Airworthiness of Aircraft Structures, Aug. 28-30, 1996, Atlanta, Georgia.
17. L. Yang, X. Deng and M. A. Sutton, "Crack-tip fields and singularity-dominance zone in a power-law creep superalloy," presentation at the 1996 *ASME Applied Mechanics and*

- Materials Summer Meeting*, June 12-14, 1996, the Johns Hopkins University, Baltimore, Maryland.
16. X. Deng, "The effect of contact and friction in dynamic debonding along material interfaces," *invited presentation at the Symposium on Mechanics and Materials Aspects of Dynamic Failure*, ASME Winter Annual Meeting, Nov. 6-11, 1994, Chicago, Illinois.
 15. X. Deng, W. Li and Ar. J. Rosakis, "Numerical simulation of dynamic crack growth and temperature rise in elastic-plastic solids," presented at *the Twelfth U.S. National Congress of Applied Mechanics*, June 27-July 1, 1994, University of Washington, Seattle, Washington.
 14. X. Deng, "Effects of frictional crack surface contact on crack-tip fields and energy release rate," presented at *the 31st Annual Technical Meeting of the Society of Engineering Science*, Oct. 10-12, 1994, Texas A&M University, College Station, Texas.
 13. X. Deng, "Mechanics of delamination and debonding in composites: Asymptotic studies," *invited presentation at the First International conference on Composites Engineering*, Aug. 28-31, 1994, New Orleans, Louisiana.
 12. X. Deng, "Stationary cracks along ideally plastic bimaterial interfaces: plane strain crack-tip fields," presented at *the Twelfth U.S. National Congress of Applied Mechanics*, June 27-July 1, 1994, University of Washington, Seattle, Washington.
 11. X. Deng and A. J. Rosakis, "Asymptotic fields for plane stress crack growth in hardening elastic-plastic solids: A finite element analysis," presented at *the First Joint ASCE-ASME-SES Meeting*, June 6-9, 1993, University of Virginia, Charlottesville, Virginia.
 10. X. Deng, "A comparison of transient elastodynamic crack-tip fields for stationary and propagating cracks," presented at *the First Joint ASCE-ASME-SES Meeting*, June 6-9, 1993, University of Virginia, Charlottesville, Virginia.
 9. X. Deng, "Interface cracks with frictionless contact in orthotropic bimaterials," presented at *the First Joint ASCE-ASME-SES Meeting*, June 6-9, 1993, University of Virginia, Charlottesville, Virginia.
 8. X. Deng, "On transient elastodynamic crack-tip fields," presented at *the 29th Annual Technical Meeting of the Society of Engineering Science*, September 14-16, 1992, University of California at San Diego, La Jolla, California.
 7. X. Deng, "Interface cracks with frictionless contact," presented at *the 29th Annual Technical Meeting of the Society of Engineering Science*, September 14-16, 1992, University of California at San Diego, La Jolla, California.
 6. X. Deng, "Elastic-plastic analysis of interface cracks," presented at *the 29th Annual Technical Meeting of the Society of Engineering Science*, September 14-16, 1992, University of California at San Diego, La Jolla, California.
 5. X. Deng, "Asymptotic analysis of debonding and delamination in composites," presented at *the SECTAM XVI Conference*, April 12-14, 1992, Nashville, Tennessee.
 4. X. Deng, "General crack tip fields for stationary and steadily growing interface cracks in anisotropic bimaterials," presented at *the 28th Annual Meeting of the Society of Engineering Science*, November 6-8, 1991, the University of Florida, Gainesville, Florida.

3. X. Deng, "Negative plastic flow and its prevention in elasto-plastic finite element computation," *invited presentation at the Melosh Medal Symposium on Finite Element Methods*, March 17, 1990, Duke University, North Carolina.
2. X. Deng and A. J. Rosakis, "Dynamic elastic-plastic crack propagation in plane stress," presented at *the 26th Annual Meeting of the Society of Engineering Science*, September 18-20, 1989, the University of Michigan, Ann Arbor, Michigan.
1. X. Zhang and X. Deng, "The two-dimensional generalized J-integral of mixed mode for stiffened plates," presented at *the Chendu Symposium on Fracture Mechanics*, September, 1984, Chendu, the People's Republic of China.

Seminar Presentations:

48. X. Deng, "Friction stir welding process simulation and experimental validation," seminar presentation at the University of New Mexico, Albuquerque, New Mexico, Feb. 29, 2008.
47. X. Deng, "Molecular dynamics simulation of nano-scale fracture in a single crystal and simulation of 3D crack growth in ductile materials," seminar presentation at Tsinghua University, China, Jan. 10, 2007.
46. X. Deng, "Recent advances in the simulation of 3D mixed-mode crack growth in ductile materials," seminar presentation at the Beijing University of Aeronautics and Astronautics, China, Jan. 9, 2007.
45. X. Deng, "Nano-scale fracture in a single crystal and correlation with stress constraint," seminar presentation at the Dalian University of Technology, China, Dec. 26, 2006.
44. M. A. Sutton, X. Deng, J. Zuo and W. Zhao, "Methodology for stable-tearing crack growth analysis in aircraft structures using NASTRAN-PATRAN-CRACK3D," seminar presentation to AFRL project visitors from AFRL/SKT, Air Force Academy, and NIAR, at the University of South Carolina, Columbia, SC, Sept. 29, 2006.
43. M. A. Sutton, X. Deng, J. Zuo and W. Zhao, "Methodology for stable-tearing crack growth analysis in aircraft structures using NASTRAN-PATRAN-CRACK3D," seminar presentation to AFRL project visitors from AFRL/SKT and Air Force Academy, at the University of South Carolina, Columbia, SC, June 2, 2006.
42. X. Deng and M. A. Sutton, "Stable tearing fracture prediction using NASTRAN-PATRAN-CRACK3D," seminar presentation to AFRL project visitors from AFRL/SKT and Air Force Academy, at the University of South Carolina, Columbia, SC, Jan. 19, 2006.
41. X. Deng, "Recent advances in mixed-mode crack growth simulation," seminar at the Goodyear R&D Center, Akron, Ohio, Nov. 18, 2005.
40. X. Deng, "Development of a mixed-mode fracture criterion for thin-shell structures," seminar at the GM R&D Center, Warren, Michigan, Oct. 14, 2005.
39. M. A. Sutton, X. Deng, W. Zhao, J. Zuo, M. J. Rodgers, "Crack growth and stable tearing simulations: Technical background and technology transfer," seminar at Lockheed, Atlanta, Georgia, Sept. 2, 2005.

38. X. Deng, "Simulation of crack growth in solids," seminar at the USC Faculty Forum in Scientific Computing (organized by the Math Dept), April 13, 2005.
37. X. Deng, "Friction Stir Welding Simulation," seminar at the SME Columbia Section Meeting, January 3, 2005.
36. X. Deng and M. A. Sutton, "Development of a mixed-mode fracture criterion for thin-shell structures," seminar at the GM R&D Center, Warren, Michigan, Oct. 22, 2004.
35. X. Deng, "Ductile mixed-mode fracture criterion development and crack growth simulations," seminar presentation at the School of Mechanical Engineering, Georgia Institute of Technology, Atlanta, Georgia, Oct. 14, 2004.
34. X. Deng and M. A. Sutton, "Development of a 3D stable tearing fracture prediction methodology," seminar presentation to industrial visitors from Boeing and Pechiney, University of South Carolina, Columbia, SC, Dec. 5, 2003.
33. X. Deng and M. A. Sutton, "Development of a 3D stable tearing fracture prediction methodology," seminar presentation to AFRL project visitors from AFRL and Air Force Academy, University of South Carolina, Columbia, SC, Dec. 5, 2003.
32. X. Deng, M. A. Sutton, "Development of a Mixed-Mode Fracture Criterion for Thin-Shell Structures," seminar at General Motors, Warren, MI, Oct. 16, 2003.
31. X. Deng, "Asymptotic studies of delamination and debonding cracks in composites," seminar presentation at the South China University of Technology, Guangzhou, China, Dec. 19, 2002.
30. X. Deng, "Mixed-mode stable crack growth simulation and fracture mechanics," seminar presentation at the Nanjing University of Aeronautics and Astronautics, China, Dec. 2, 2002.
29. X. Deng, "Asymptotic studies of delamination and debonding cracks in composites," seminar presentation at the Department of Engineering Mechanics, Tongji University, Shanghai, China, Nov. 25, 2002.
28. X. Deng, "Topics in fracture mechanics and manufacturing process simulation," seminar presentation at the Nanchang Institute of Aeronautical Technology, China, Nov. 20, 2002.
27. X. Deng, "Friction stir welding process simulation and verification," seminar presentation at Zhejiang University, Hangzhou, China, Nov. 18, 2002.
26. X. Deng, "Friction stir welding process simulation and verification," seminar presentation at the Hefei University of Technology, China, Nov. 14, 2002.
25. X. Deng, "Mixed-mode stable crack growth simulation and fracture mechanics," seminar presentation at the Department of Modern Mechanics, University of Science and Technology of China, Hefei, China, Nov. 13, 2002.
24. X. Deng, "Mixed-mode stable crack growth simulation and fracture mechanics," seminar presentation at the Xi'an Jiaotong University, China, Nov. 1, 2002.
23. X. Deng, "Asymptotic studies of delamination and debonding cracks in composites," seminar presentation at the Department of Engineering Mechanics, Dalian University of Technology, China, Oct. 29, 2002.

22. X. Deng, "Friction Stir Welding Process Simulation and Verification," seminar presentation at the Department of Engineering Mechanics, Dalian University of Technology, China, Oct. 17, 2002.
21. X. Deng, "Mixed-mode fracture criterion," Seminar presentation at the Department of Engineering Mechanics, Dalian University of Technology, China, Oct. 10, 2002.
20. X. Deng, "Mixed-Mode Stable Crack Growth Simulation and Fracture Criterion," seminar presentation at the Department of Engineering Mechanics, Tsinghua University, Beijing, China, Sept. 27, 2002.
19. X. Deng, "Recent Advances in Mixed-Mode Stable Crack Growth Simulation and Fracture Mechanics," seminar presentation at the Department of Flight Vehicle Design and Engineering Mechanics, Beijing University of Aeronautics and Astronautics, China, Sept. 27, 2002.
18. X. Deng, "Crack Growth Simulation Techniques and Finite Element Implementation," seminar presentation at the Department of Engineering Mechanics, Dalian University of Technology, China, Sept. 20, 2002.
17. X. Deng, "Metal Cutting Process Simulation and Experimental Verification," seminar presentation at the Department of Engineering Mechanics, Dalian University of Technology, China, Sept. 5, 2002.
16. M. A. Sutton, X. Deng, and A. P. Reynolds, "Development of a 3-D stable tearing prediction methodology," seminar presentation at the Air Force Research Laboratories, Dayton, Ohio, Feb. 25, 2002.
15. X. Deng, "Mixed-mode characterization and crack growth simulation" seminar presentation at Zhejiang University, P. R. China, December 18, 2001.
14. X. Deng, "Mixed-mode characterization and crack growth simulation" seminar presentation at Shanghai Jiaotong University, P. R. China, December 14, 2001.
13. X. Deng, "Mixed-Mode Fracture, Crack-Tip Fields, and Stable Crack Growth Simulation" seminar presentation at General Motors R & D Center, Dearborn, Michigan, August 1, 2001
12. X. Deng, "Metal cutting process simulation and comparisons with test results," Seminar at the Department of Mechanical Engineering, University of South Carolina, Oct. 3, 2000.
11. X. Deng, "Modeling techniques, finite element code development, and mixed-mode CTOD fracture criterion for elastic-plastic crack growth simulation," Seminar at the Department of Civil Engineering, University of Missouri, Columbia, Missouri, April 12, 1999.
10. X. Deng, "Development of an elastic-plastic crack-growth simulation code and a mixed-mode CTOD fracture criterion," Seminar at the Department of Mechanical Engineering, University of South Carolina, Columbia, South Carolina, Feb. 8, 1999.
9. X. Deng, "Numerical modeling of dynamic crack growth in metals and interfacial fracture mechanics of heterogeneous solids," seminar presentation at the Department of Aerospace and Mechanical Engineering, University of Arizona, Tucson, Arizona, Feb. 29, 1996.

8. X. Deng, "Interfacial fracture mechanics and delamination and debonding in composites," seminar presentation at the Mechanics of Materials Branch, NASA Langley Research Center, Hampton, Virginia, July 28, 1995.
7. X. Deng, "Composite materials, interface mechanics, and dynamic fracture," seminar presentation at the Aeronautical Materials Research Institute, Beijing, the People's Republic of China, May 25, 1995.
6. X. Deng, "On several important issues in the interface mechanics of composite materials," seminar presentation at the Department of Flight Vehicle Design and Applied Mechanics, Beijing University of Aeronautics and Astronautics, Beijing, the People's Republic of China, May 24, 1995.
5. M. A. Sutton, Y. J. Chao, X. Deng, and J. S. Lyons, "Durability and Life Prediction for Aerospace Materials and Structures," seminar presentation at the Wright-Patterson Air Force Base Research Laboratories, Dayton, Ohio, February 16, 1995.19.
4. X. Deng, "Fracture mechanics basis for delamination and debonding analyses in composites," seminar presentation at the Department of Mechanical Engineering, Clemson University, Clemson, South Carolina, September 30, 1994.
3. X. Deng, "Fracture mechanics of bimaterial interfaces: basic theories and recent advances," seminar presentation at the R&D Center, General Motors Corporation, Warren, Michigan, August 5, 1994.
2. X. Deng, "Dynamic crack propagation in elastic-plastic solids," seminar presentation at the Department of Mechanical Engineering, Washington University, St. Louis, Missouri, May 30, 1990.
1. X. Deng, "Plane stress crack growth in elastic-plastic solids," seminar presentation at the Department of Mechanical Engineering, University of South Carolina, Columbia, South Carolina, May 15, 1990.