

Resumé

Name: Reza Malek-Madani

Rank: Professor

Address: Dept. of Mathematics, United States Naval Academy, Annapolis, MD 21402-5002

Tel: (410) 293-6718 (W), (301) 942-1289 (H)

Education

Ph. D., Applied mathematics, 1979, Brown University

M. S., Mathematics, 1975, Southern Illinois University

B. A., Mathematics, 1972, Southern Illinois University

Honors

Van Vleck Assistant Professor, University of Wisconsin-Madison, Aug 1979 to Jun 1981.

University Fellowship, Brown University, 1975-1976.

University Fellowship, Southern Illinois University, 1974-1975.

Graduated from Southern Illinois University with University Honors.

Professional Experience

Jan 1996 to present, Director of Research and Scholarship, U. S. Naval Academy

Aug 1992 to present, Professor, U. S. Naval Academy.

Aug 1991 to Apr 1995, Acting Program Manager, Applied Analysis Program, ONR.

Jan to Sep 1989, Sabbatical Leave at the University of Maryland, College Park.

Aug 1986 to present, Assoc. Prof., Department of Mathematics, U. S. Naval Academy.

Aug 1983 to Aug 1986, Asst. Prof., Department of Mathematics, U. S. Naval Academy.

Jan 1984 to present, Fellow-by-Courtesy, Dept. of Mech. Eng., Johns Hopkins University.

Jan 1983 to May 1984, Vis. Asst. Prof., Dept. of Mechanics, Johns Hopkins University.

Jun 1982 to Aug 1983, Res. Assoc., Dept. of Rational Mechanics, Johns Hopkins University.

Aug 1981 to Jun 1982, Asst. Prof., Dept. of Math., Virginia Poly. Inst. and State University.

Aug 1979 to Jun 1981, Asst. Prof., Dept. of Math., University of Wisconsin-Madison.

Aug 1979 to Jun 1981, Res. Assoc., Math. Research Center, University of Wisconsin-Madison.

Publications

1. Malek-Madani, R. Energy criteria for finite hyperelasticity, *Arch. Rational Mech. Anal.*, **77** No. 2, 1981 pp. 177–188.
2. Lin, S. S., & Malek-Madani, R., Solution to the Riemann problem for the equations of gas dynamics in a tube with varying cross section, *Transactions of the 26th Conference of Army Mathematicians*, **81-1**, 1981 pp. 341-354.
3. Lin, S. S., & Malek-Madani, R., Formation of singularities for a conservation law with damping, *Mathematics Research Center Technical Report 2302*, University of Wisconsin-Madison, 1982.
4. Malek-Madani, R., & Nohel, J. A., Formation of singularities for a conservation law with memory, *Transactions of the 28th Conference of the Army Mathematicians*, **83-1** 1983, pp. 477-488.
5. Malek-Madani, R. Formation of singularities for a conservation law with damping term, in *Volterra and Functional Differential Equations*, *Lecture Notes in Pure and Applied Mathematics*, Marcel Dekker **81**, 1982 pp. 263–272.
6. Malek-Madani, R., & Nohel, J. A. Formation of singularities for a conservation law with memory, *SIAM J. Math. Anal.* **16** no. 3, 1985 pp. 530–540.
7. Malek-Madani, R., & Smith, P. D. Regularity of local minimizers of an isotropic compressible hyperelastic material, *J. of Appl. Anal.* **22**, 1986, pp. 55–70.
8. Antman, S. S., & Malek-Madani, R., Waves in a nonlinearly viscoelastic media, in *AMS Contemporary Mathematics*, edited by B. L. Keyfitz, **60**, 1987, pp. 1–10.
9. Antman, S. S., & Malek-Madani, R., Dissipative mechanisms, in *Metastability and incompletely posed problems*, edited by S. S. Antman, J. L. Ericksen, D. Kinderlehrer, I. Muller, *IMA volumes in Mathematics and its Applications*, **3**, 1987, pp. 1–16,
10. Antman, S. S., & Malek-Madani, R., Travelling Waves in Nonlinearly Viscoelastic Media and Shock Structure in Elastic Media, *Quart. Appl. Math.*, **46**, 1988, pp. 77–93.
11. Malek-Madani, R., & Smith P. D., Lipschitz Continuity of Local Minimizers of a Nonconvex Functional Applicable Analysis, **28**, 1988, 223–230.
12. Douglas, A. S., Malek-Madani, & R., Chen, H. Tz. Stability Conditions for Shearing in Plates, in *Impact Loading and Dynamic Behavior of Materials*, Volume 2, edited by C. Y. Chiem, H. -D. Kunze, L. W. Meyer, DGM, Informationsgesellschaft, 1988, pp. 751–760.
13. Chen, H. Tz., Douglas, A. S., & Malek-Madani, R., An Asymptotic Stability Condition for Inhomogeneous Simple Shear, *Quarterly of Applied Mathematics*, **47**, 1989, pp. 247–262.
14. Douglas, A. S., Chen, H. Tz., & Malek-Madani, R., Stability Conditions for nonhomogeneous Simple Shearing, in *Proceedings of the 4th International Conference on Material Properties at High Rates of Strain*, *Inst. Phys. Conf. Ser.* 102: Session 6a, Oxford, England, 1989, pp. 275–282.

15. Malek-Madani, R., Douglas, A. S., & Chen, H. Tz., The Effect of Boundary Data and Diffusion on Shear Localization, in *Advances in Plasticity*, edited by A. S. Khan and M. Tokuda, 1989, pp. 459–462.
16. J. H. Maddocks & R. Malek-Madani, Steady-state shear bands in thermo-plasticity - I. Vanishing yield stress, *Int. J. Solids and Struct.*, 1992, **29**, pp. 2039 - 2061.
17. Maddocks, J. H., and Malek-Madani, R., Stability of Localized Shear bands in Thermoplasticity, Part II: Non-vanishing Yield Stress, *Int. J. Solids and Struct.*, submitted.
18. R. Malek-Madani, A limiting stability criterion for steady-state shear-bands, in *Proceedings of the 4th International Conference on Plasticity and its Current Applications*, ed. A. S. Khan, 1993.
19. R. Malek-Madani, David R. Smith & Christopher R. Gunderson, Symbolic Manipulators in the Classroom, Fourth Symposium on Education, American Meteorological Society, 1995, pp. 34 – 36.
20. Julie A. Preyer, David R. Smith & R. Malek-Madani, Entrainment into Cumulus Clouds on Mathematica, Fourth Symposium on Education, American Meteorological Society, 1995, pp. 41 – 43.
21. Brent M. Strong, Christopher R. Gunderson & R. Malek-Madani, Wind-Driven Circulation on Mathematica, Fourth Symposium on Education, American Meteorological Society, 1995, pp. 44 – 46.
22. Camille Garrett and R. Malek-Madani, Breaking of Waves and Burgers' Equation on Mathematica, Fourth Symposium on Education, American Meteorological Society, 1995, pp. 50 – 53.
23. R. Malek-Madani, Advanced Engineering Mathematics on Mathematica, in *Proceedings of the 3rd ICTCM meeting*, Orlando, FL., 1995, pp. 1 – 8.
24. R. Malek-Madani, Dynamical Systems and Oceanography, *Naval Research Review* **17**, 1995, no. 1, pp. 1 – 3.
25. R. Malek-Madani, Flow past Cylinder, *Mathematica Journal*, 1996, pp. 42 – 47.
26. James E. Coleman, R. Malek-Madani, David R. Smith, Visualization of Fluid Flows in Mathematica, *Proceedings of the IEEE/ICTMS, Ocean Community Conference*, Baltimore, 1998, pp. 1-6.
27. R. Malek-Madani, R. A. Raouf, Stability Analysis of Thermo-Visco-Plastic Materials Undergoing High-Rate Shear Deformations, *Quarterly of Applied Mathematics*, 57 (1999), pp. 213-227.

Books

Advanced Engineering Mathematics with Mathematica and MATLAB, Addison-Wesley-Longman, 1998, 1100+pp.

Theses

1. Admissibility Criteria and Hyperbolic Conservation Laws with Applications to Nonlinear Elasticity, Ph. D. Thesis, Brown University, 1979.
2. Propagation of Electromagnetic Waves in a Torus: Solution of Maxwell's Equations in Toroidal Coordinate System, Masters Thesis, Southern Illinois University, 1975.