

Fuping Yuan

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Research Interests

- 1) Finite Element Analysis for Nonlinear Continuum Mechanics (software package: LS-DYNA, ANSYS, ABAQUS or User Defined FEM code by FORTRAN).
- 2) Experimental Stress Analysis in Solid Mechanics
- 3) Ballistic and Impact Behavior of Materials.

Education

August 2002-Present	<u>PhD Student in Mechanical and Aerospace Engineering</u> Case Western Reserve University, Cleveland, Ohio, USA
July 2002	<u>Master of Science in Engineering Mechanics</u> University of Science and Technology of China, Hefei, Anhui, China
July 1999	<u>Bachelor of Science in Material Strength & Material Design</u> University of Science and Technology of China, Hefei, Anhui, China

Experience

<u>Graduate Research/Teaching Assistant</u> <i>CWRU, Cleveland, OH</i>	Aug. 2002- Present
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- Research Involved in Mechanisms of Slip Weakening of Rocks and Analog Materials at Co-Seismic Slip Rates.
- Study of High-speed Friction at Metal-on-metal Interfaces (including both experimental study and FEM analysis for the experimental results).
- Study of Spall Strength of Glass Fiber Reinforced Polymer Composites.
- Study of Spall strength, HEL and dynamic response of a Zr-based BMG material.
- Taught undergraduate Numerical Methods for Engineers. Work involved lab instructions and homework grading.
- Taught graduate Mechanics of Continuous Media. Work involved classroom lectures, recitations, and homework grading.

<u>Graduate Research/Teaching Assistant</u> <i>University of Science and Technology of China, Hefei, Anhui, China</i>	Sep. 1999 – Jul. 2002
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- Research Involved in wave propagation in a heterogeneous material.
- Taught undergraduate Theoretical Mechanics. Work involved recitations and homework grading.

Honors

<u>Case Prime Fellowship</u>	Case Western Reserve University, 2002- Present
<u>Guang-hua Education Scholarship</u>	University of Science and Technology of China, 2000

Professional Affiliations

- Member of American Society of Mechanical Engineering (ASME), 2006-present.
- Member of the Society of Experimental Mechanics (SEM), 2005-present.
- Member of the Minerals, Metals and Materials Society (TMS), 2007-present.

Skills

- Excellent experience with LS-DYNA, AutoCAD™.
- Good experience with ANSYS, ABAQUS.
- Good programming skills with FORTRAN™, C and MATLAB™.
- Excellent knowledge of the MicroSoft™ Office, Techplot™, Origin™, Adobe™ Illustrator.

Publications

Yuan, F., Prakash, V. and Lewandowski J.J. (2007). Spall Strength and Hugoniot Elastic Limit of a Zirconium-based Bulk Metallic Glass under Planar Shock Compression, **Journal of Materials Research**, Vol. 22 (No. 2), 401-411.

Yuan, F., and Prakash, V., (2007). Slip Weakening in Rocks and Analog Materials at Co-seismic Slip Rates, Accepted by **Journal of the Mechanics and Physics of Solids**.

Yuan, F., Tsai, L., Prakash, V., Dandekar, D. P. and Rajendran A. M., (2007). Spall Strength of Glass Fiber Reinforced Polymer Composites, Accepted by **International Journal of Solids and Structures**.

Yuan, F., Liou, N. S., Prakash, V., (2007). High Speed Friction at Metal-on-metal Interfaces, Accepted by **International Journal of Plasticity**.

Yuan, F., Sunny, G., Prakash, V., and Lewandowski, J. J., (2007). Shock response of a Zr-based bulk metallic glass. Key-note lecture, and in **Proceedings of the 13th International Symposium on Plasticity and its applications**, Plasticity 2007, Girdwood, Alaska.

Yuan, F. and Prakash, V. (2006). Dynamic Slip Resistance at Metal-on-metal Interfaces, in **Proceedings of 2006 International Mechanical Engineering Conference and Exposition, ASME** (American Society of Mechanical Engineers, New York, 2006), Paper # IMECE2006-15383.

Yuan, F., Tsai, L. and Prakash, V. (2006). Spall Strength of Glass Fiber Reinforced Polymer Composites, in **Proceedings of 2006 International Mechanical Engineering Conference and Exposition, ASME** (American Society of Mechanical Engineers, New York, 2006), Paper # IMECE2006-15378.

Yuan, F., Prakash, V., (2006). Plate-impact Investigations of High-speed Friction, in **Proceeding of the 12th International Symposium on Plasticity and its Applications** (Neat, Inc., MD, USA), (Eds.: Khan, A. S., and Kazmi, R.).

Yuan, F. and Prakash, V. (2006). Investigations of High-speed Friction at Metal-on-metal Interfaces, in **Proceedings of the 2006 SEM Annual Conference and Exposition on Experimental and Applied Mechanics** (Society of Experimental Mechanics, Bethel, CT, 2006), Paper # 353, 1314-1322.

Yuan, F. and Prakash, V. (2005). Sliding Resistance of Rocks and Analog Materials at Co-Seismic Slip Rates, in **Proceedings of the 2005 SEM Annual Conference and Exposition on Experimental and Applied Mechanics** (Society of Experimental Mechanics, Bethel, CT, 2005), Paper # 321.

Sunny, G.P., Yuan, F., Lewandowski, J.J. and Prakash V. (2005). Dynamic Stress-strain response of a Zr-based bulk metallic glass, in **Proceedings of the 2005 SEM Annual Conference and Exposition on Experimental and Applied Mechanics** (Society of Experimental Mechanics, Bethel, CT, 2005), Paper # 324.

Presentations

Yuan, F., Prakash, V. and Lewandowski J.J., Spall Strength of a Zirconium-Based Bulk Metallic Glass, **2007 TMS Annual Meeting**, Orlando, Florida, February 25 – March 1.

Yuan, F., Prakash, V. and Lewandowski J.J., Structure of Shock Waves and Hugoniot Elastic Limit of a Zirconium-Based Bulk Metallic Glass, **2007 TMS Annual Meeting**, Orlando, Florida, February 25 – March 1.

Yuan, F., and Prakash, V., Plate Impact Investigation of High-Speed Friction at Metal-on-Metal Interfaces, **2007 TMS Annual Meeting**, Orlando, Florida, February 25 – March 1.

Yuan, F., Tsai, L. and Prakash, Spall Strength of Glass Fiber Reinforced Polymer Composites, **2007 TMS Annual Meeting**, Orlando, Florida, February 25 – March 1.

References

Dr. Vikas Prakash, Professor
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