Purvance, M. D., D. Russell, D. Potyondy and S. Emam. "Spatial Searching and Contact Detection in PFC 5.0," in ***Continuum and Distinct Element Modeling in Geomechanics — 2011 (Proceedings, 2nd International FLAC/DEM Symposium (Melbourne, February 2011)***, Paper 14-01, pp. 783-790. D. Sainsbury et al., Eds. Minneapolis: Itasca International Inc, 2011.

Mena, B., P. M. Mai, K. B. Olsen, M. D. Purvance and J. N. Brune. "Hybrid Broadband Ground-Motion Simulation Using Scattering Green's Functions: Application to Large-Magnitude Earthquakes," *Bull. Seis. Soc. Am.*, ***100***(5A), 2143-2162 (2010).

Anooshehpoor, R., M. D. Purvance and J.J.N. Brune. "Field-Testing Precariously Balanced Rocks in the Vicinity of San Bernardino, California: Seismic Hazard Ramifications," 2008 SCEC Annual Meeting (Palm Springs, California, September 2008), Abstract, 2008.

Brune, J. N., M. D. Purvance, J. K. Daemen, J. Scott and J. N. Louie. "Unfractured Sandstones along the San Andreas Fault: Constraints on Extreme Ground Motion and Absolute Stress," *Seismol. Res. Lett.*, ***79***(2), 296-297 (2008).

Brune, J. N., F. Suarez and M. D. Purvance. "Seismic Hazard across the California-Baja California Border: New Evidence from Precariously Balanced Rocks and Recent Strong Motion Records Compared with Draft 2008 Hazard Maps for California," *Seismol. Res. Lett.*, ***79***(2), 282 (2008).

Brune, J. N., J. Whitney, J. G. Anderson, M. D. Purvance and R. Anooshehpoor. "An Overview of the Constraints on Unexceeded Ground Motions Based on Precariously Balanced Rocks and Unstable Precipitous Cliffs at Yucca Mountain, and Unfractured Sandstones along the San Andreas Fault," *Seismol. Res. Lett.*, ***79***(2), 283 (2008).

Mena, B., P. M. Mai, K. B. Olsen, M. D. Purvance and J. N. Brune. "Constraints from Precariously Balanced Rocks on Broadband Ground Motion Simulation for Seven TeraShake Scenarios on the Southern San Andreas Fault," *Seismol. Res. Lett.*, ***79***(2), 280 (2008).

Purvance, M. D. "Is Time/Slip/Velocity Weakening Necessary in Dynamic Rupture Simulations? Application of a Discrete Element Method to Model Yucca Mountain Ground Motions,"2008 SCEC Annual Meeting (Palm Springs, California, September 2008), Abstract, 2008.

Purvance, M. D., and J. N. Brune. "Fragile Geomorphic Features on Yucca Mountain, Nevada," *Seismol. Res. Lett.*, ***79***(2), 296 (2008)

Purvance, M. D., A. Anooshehpoor and J. N. Brune. "Freestanding Block Overturning Fragilities: Numerical Simulations and Experimental Validation," *Earthq. Eng. Struct. D.*, ***37***(5), 791-808 (2008).

Purvance, M. D., A. Anooshehpoor, J. N. Brune and R .E. Abbott. "Site Conditions at Precariously Balanced Rock (PBR) Sites in the Mojave, Southern California," *Seismol. Res. Lett.*, ***79***(2), 347 (2008).

Rood, D. H., J. Brune, K. Kendrick, M. D. Purvance, R. Anooshehpoor, L. Grant-Ludwig and G. Balco. "How Do We Date a PBR?: Testing Geomorphic Models Using Surface Exposure Dating and Numerical Methods," in 2008 SCEC Annual Meeting (Palm Springs, California, September 2008), Abstract, 2008.

Schlom, T. M., L. G. Ludwig, K. J. Kendrick, J. N. Brune, M. D. Purvance, D. H. Rood and R. Anooshehpoor. "An Initial Study of Precariously Balanced Rocks at the Grass Valley Site, and Their Relevance to Quaternary Faults in and near the San Bernardino Mountains, CA.," 2008 SCEC Annual Meeting (Palm Springs, California, September 2008), Abstract, 2008.

Anderson, J. G., M. D. Purvance, A. Anooshehpoor, and J. N. Brune. "Simplified Probabilistic Seismic Hazard Analysis for Precarious Rocks on Yucca Mountain, Nevada." *Seismol. Res. Lett.*, ***78***(2), 281 (2007).

Anooshehpoor, A., M. D. Purvance, J. N. Brune and T. Rennie. "Reduction in the Uncertainties in the Ground Motion Constraints by Improved Field-Testing Techniques of Precariously Balanced Rocks," Abstract, 2007.

Brune, J. N., M. D. Purvance and A. Anooshehpoor). "Gauging Earthquake Hazards with Precariously Balanced Rocks, *Am. Sci.*, ***95***, 36-43 (2007).

Brune, J. N., J. Daemen, J. B. Scott, J. N. Louie and M. D. Purvance. "Unfractured Sandstones along the San Andreas Fault: New Tensile Strength and Wave Velocity Data, and Implications for Constraints on Extreme Ground Motion and Absolute Stress," 2007 SCEC Annual Meeting (Palm Springs, California, September 2007), Abstract, 2007.

Grant Ludwig, L., K. Kendrick, L. Perg, J. N. Brune, M. D. Purvance, A. Anooshehpoor, S. Akciz and D. Weiser. "Preliminary Sample Collection and Methodology for Constraining Age of Precariously Balanced Rocks (PBR)," 2007 SCEC Annual Meeting (Palm Springs, California, September 2007), Abstract, 2007.

Perg, L., L. Grant Ludwig, K. Kendrick, J. N. Brune, M. D. Purvance, A. Anooshehpoor, S. Akciz and D. Weiser. "Precariously Balanced Rocks (PBR) Surface Exposure History, Constrained by In-Situ Terrestrial Cosmogenic Nuclides (TCNs)," 2007 SCEC Annual Meeting (Palm Springs, California, September 2007), Abstract, 2007.

Perg, L. A., L. G. Ludwig, K. Kendrick, J. N. Brune, M. D. Purvance, A. Anooshehpoor and S. Ackiz. "Natural Paleoseismometers: Cosmogenic Nuclide Dating of Precariously Balanced Rocks (PBRs) - Integral Constraints on Maximum Ground Accelerations," *Eos Trans. AGU*, ***88***, Fall Meet. Suppl., Abstract NS11E-0831 (2007).

Purvance, M. D. and J. N. Brune. "Fragility Estimation for Precipitous Cliffs and a Rock Stack on Yucca Mountain, Nevada," 2007 SCEC Annual Meeting (Palm Springs, California, September 2007), Abstract, 2007.

Purvance, M. D., J. G. Anderson, J. N. Brune and A. Anooshehpoor. "Ground Motion Catalog of 6832 Foamquakes — Implications for Extreme Ground Motions," 2007 SCEC Annual Meeting (Palm Springs, California, September 2007), Abstract, 2007.

Purvance, M. D., A. Anooshehpoor, J. N. Brune, R. Brune, D. Weiser, K. Kendrick, S. Akciz and L. Grant Ludwig. "Field Tests of Doomed Precariously Balanced Rocks between the San Jacinto and Elsinore Faults," 2007 SCEC Annual Meeting (Palm Springs, California, September 2007), Abstract, 2007.

Purvance, M. D., R. W. Graves, J. N. Brune, B. Aagaard and K. Hudnut. "Comparison between Precariously Balanced Rocks and the ShakeOut Simulation: Ground Motion Constraints and Implications for Electric Substation Damage," 2007 SCEC Annual Meeting (Palm Springs, California, September 2007), Abstract, 2007.

Stirling, M., M. D. Purvance and A. Anooshehpoor. "Precarious Rocks and Near-Fault Earthquake Motions from a Reverse Fault in New Zealand: Cross Validating the North American Studies," 2007 SCEC Annual Meeting (Palm Springs, California, September 2007), Abstract, 2007.

Anooshehpoor, A., M. D. Purvance, J. N. Brune and Y. Uchiyama. "Quantification of the Precarious Rock Constraints on Ground Motion during the 1952 Kern County Earthquake: An Analog for an Earthquake on the Puente Hills Fault," 2006 Annual SCEC Meeting, Palm Springs, California, September 2006), Abstract, 2006.

Brune, J. N., A. Anooshehpoor, M. D. Purvance and R. J. Brune. "Band of Precariously Balanced Rocks between the Elsinore and San Jacinto, California, Fault Zones: Constraints on Ground Motion for Large Earthquakes, *Geology*, ***34***(3), 137-140 (2006).

Brune, J. N., M. D. Purvance, J. Daemen, J. S. Chester and T. Tullis. "Unfractured Sandstones along the San Andreas Fault: Constraints on Extreme Ground Motion and Absolute Stress," 2006 Annual SCEC Meeting, Palm Springs, California, September 2006), Abstract, 2006.

Pullammanappallil, S., M. D. Purvance and J. N. Brune. "Refraction Microtremor (ReMi) Results for Vs30 at Precarious Rock Sites between the Elsinore and San Jacinto Faults," 2006 Annual SCEC Meeting, Palm Springs, California, September 2006), Abstract, 2006.

Purvance, M. D., A. Anooshehpoor and J. N. Brune. "Precariously Balanced Rock Methodology and Shake Table Calibration," *Seismol. Res. Lett.*, ***77***(2), 275 (2006).

Purvance, M. D., J. N. Brune and J. G. Anderson. "Methodology to Obtain Probabilistic Seismic Hazard Estimates Consistent with Precariously Balanced Rocks," 2006 Annual SCEC Meeting, Palm Springs, California, September 2006), Abstract, 2006.

Purvance, M. D., J. N. Brune and J. G. Anderson. "Weighting Probabilistic Seismic Hazard Estimates via Precariously Balanced Rock Fragility," SCEC/ERI Joint Workshop on Earthquakes in Urban Areas, Oxnard, California, June 2006), Abstract, 2006.

Purvance, M. D., J. N. Brune and A. Anooshehpoor. "Earthquake Loss Estimation of Overturned Objects," 2006 SSA Conference, San Francisco, April 2006), 2006.

Purvance, M. D., P. Cundall and J. N. Brune. "Investigation of Dynamic, Self Nucleating Ruptures Utilizing the Particle Flow Code (PFC)," First Annual Extreme Ground Motion Meeting (Palm Springs, California, September 2006), Presentation, 2006.

Purvance, M. D., Y. Uchiyama, A. Anooshehpoor, J. N. Brune, J. G. Anderson, J. A. Flint and N. C. Hockensmith. "Extreme Particle Motions in a Foam Rubber Model of Spontaneous Ruptures: Analogous to Earthquake Ruptures," 2006 Annual SCEC Meeting, Palm Springs, California, September 2006), Abstract, 2006.

Anderson, J. G., J. N. Brune, A. Anooshehpoor and M. D. Purvance. "Data Needs for Improved Seismic Hazard Analysis," in *Directions in Strong Motion Instrumentation*, NATO Science Series IV: Earth and Environmental Sciences, Vol. 58, pp. 1-24. P. Gulkan and J. G. Anderson, Eds. (2005).

Anooshehpoor, A., M. D. Purvance and J. N. Brune. "Additional Measurements of Toppling Directions for Precariously Balanced Rocks in Southern California," 2005 SCEC Meeting, Palm Springs, California, September 2005), Abstract. 2005.

Anooshehpoor, A. M. D. Purvance and J. N. Brune. "Shake Table Validation of Precariously Balanced Rock Methodology," *Eos Trans. AGU*, ***86***, Fall Meet. Suppl., Abstract S21B-0210 (2005).

Purvance, M. D. "Overturning of Inverted Pendulum Structures Exposed to Strong Ground Motions," *Seismol. Res. Lett.*, ***76***(2), 250 (2005).

Purvance, M. D. ***Overturning of Slender Blocks: Numerical Investigation and Application to Precariously Balanced Rocks in Southern California***. Ph.D. Dissertation, University of Nevada, Reno, 2005.

Purvance, M. D., A. Anooshehpoor and J. N. Brune. "Shake Table Validation of Precariously Balanced Rock Methodology," 2005 SCEC Meeting, Palm Springs, California, September 2005), Abstract, 2005.

Purvance, M. D., J. N. Brune and A. Anooshehpoor. "Attenuation Relation Consistency with Precariously Balanced Rocks," 2005 SCEC Meeting, Palm Springs, California, September 2005), Abstract, 2005.

Purvance, M. D., J. N. Brune and A. Anooshehpoor. "Testing PSHA Output via Precariously Balanced Rocks," *Eos Trans. AGU*, ***86***, Fall Mtng. Suppl., Abstract S43B-1075 (2005).

Purvance, M. D., J. N. Brune, A. Anooshehpoor, N. Abrahamson, H. Thio and P. Somerville. "Precariously Balanced Rocks and Vector-Valued Probabilistic Seismic Hazard: Independent Tests of Seismic Hazard Estimates," *Seismol. Res. Lett.*, ***76***(2), 246 (2005).

Anderson, J. G., G. Biasi, J. N. Brune, M. D. Purvance and D. Kilb. "Evidence for Variability in the Shape, Not Just the Level, in the High Frequency Spectrum of Strong Ground Motion," *Eos Trans. AGU*, ***85***, Fall Meet. Suppl., Abstract S22B-07 (2004).

Purvance, M. D. "Parameters Contributing to the Overturning of Precariously Balanced Rocks," 2004 SCEC Conference (Palm Springs, California, September 2004), Abstract, 2004.

Purvance, M. D., J. N. Brune and A. Anooshehpoor. "Evidence of Large Fault Parallel/Perpendicular PGV Ratios," 2004 SCEC Conference (Palm Springs, California, September 2004), Abstract, 2004.

Purvance, M. D., J. N. Brune, A. Anooshehpoor, H. Thio and P. Somerville. "Precariously Balanced Rock Toppling Constraints and Vector-Valued Hazard," 2004 SCEC Conference (Palm Springs, California, September 2004), Abstract, 2004.

Purvance, M. D., and J. G. Anderson. "A Comprehensive Study of the Observed Spectral Decay in Strong-Motion Accelerations Recorded in Guerrero, Mexico," *Bull. Seism. Soc. Am.*, ***93***(2), 600-611 (2003).

Purvance, M. D., and J. G. Anderson. "The Observed Rate of Spectral Decay in Strong-Motion Accelerations Recorded in Guerrero, Mexico," 2002 SSA Annual Meeting (Victoria, British Columbia, Canada, April 2002), Abstract, 2002.

Purvance, M. D. and J. G. Anderson. "The Behavior of the Spectral Decay in Strong Ground Motion Accelerations Recorded in Guerrero, Mexico," 7th National Conference on Earthquake Engineering (Boston, July 2002).

Invited Talks

4th International Conference on Earthquake Engineering, Tokyo, Japan, March 2007: "Overturning of Freestanding Objects with Application to Precariously Balanced Rocks."

SCEC Annual Meeting, Palm Springs, California, September 2005: "Overturning of Slender Blocks: Numerical Investigation and Application to Precariously Balanced Rocks in Southern California."