Stanford

# Jack Baker

Professor of Civil and Environmental Engineering

## CONTACT INFORMATION

- **Administrator**

  Kim Vonner - Administrative Associate

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## Bio

### BIO

Jack Baker's research focuses on the use of probabilistic and statistical tools for modeling of extreme loads on structures. He has investigated probabilistic modeling of seismic hazards, improved characterization of earthquake ground motions, dynamic analysis of structures, prediction of the spatial extent of soil failures from earthquakes, and tools for modeling loads on spatially distributed infrastructure systems. Dr. Baker joined Stanford from the Swiss Federal Institute of Technology (ETH Zurich), where he was a visiting researcher in the Department of Structural Engineering. He received his Ph.D. in Structural Engineering from Stanford University, where he also earned M.S. degrees in Statistics and Structural Engineering. He has industry experience in seismic hazard assessment, ground motion selection, construction management, and modeling of catastrophe losses for insurance companies.

### ACADEMIC APPOINTMENTS

- Professor, Civil and Environmental Engineering
- Affiliate, Precourt Institute for Energy

### HONORS AND AWARDS

- Helmut Krawinkler Award, Structural Engineers Association of Northern California (SEAONC) (2019)
- Walter L. Huber Civil Engineering Research Prize, American Society of Civil Engineering (ASCE) (2018)
- Excellence in Structural Engineering Research Award, Structural Engineers Association of California (SEAOC) (2015)
- Early Achievement Research Award, International Association for Structural Safety and Reliability (IASSAR) (2013)
- Eugene L. Grant Award, Stanford University (2013)
- Outstanding Paper Award, Earthquake Engineering Research Institute (2011)
- Career Award, National Science Foundation (2010)
- Shah Family Innovation Prize, Earthquake Engineering Research Institute (2010)

### PROFESSIONAL EDUCATION

- PhD, Stanford (2005)

### LINKS

- Research Website: http://www.stanford.edu/~bakerjw/
- Google Scholar: https://scholar.google.com/citations?hl=en&user=im82jgIAAAAJ

## Teaching

### COURSES

**2019-20**

- Design of Steel Structures: CEE 181 (Aut)
- Probabilistic Models in Civil Engineering: CEE 203 (Aut)
- Random Vibrations: CEE 289 (Win)
- Structural Engineering and Geomechanics Seminar: CEE 298 (Win)

**2018-19**

- Design of Steel Structures: CEE 181 (Aut)
- Probabilistic Models in Civil Engineering: CEE 203 (Aut)
- Structural Engineering and Geomechanics Seminar: CEE 298 (Win)
- Structural Reliability: CEE 204 (Win)

**2017-18**

- Design of Steel Structures: CEE 181 (Aut)
- Probabilistic Models in Civil Engineering: CEE 203 (Aut)
- Random Vibrations: CEE 289 (Spr)
- Structural Engineering and Geomechanics Seminar: CEE 298 (Win)
- Topics in Disaster Resilience Research: CEE 308, GEOPHYS 308 (Win, Spr)

**2016-17**

- Managing Natural Disaster Risk: CEE 29N (Win)
- Probabilistic Models in Civil Engineering: CEE 203 (Aut)
- Structural Engineering and Geomechanics Seminar: CEE 298 (Win)
- Structural Reliability: CEE 204 (Spr)

### STANFORD ADVISEES

**Doctoral Dissertation Reader (AC)**

Max Ferguson, Anne Hulsey, Amory Martin, Bo Peng, Yixiao Sheng

**Doctoral Dissertation Advisor (AC)**

Yilin Chen, Sabine Loos

**Master's Program Advisor**

Aaron Appelle, Anthony Ayllon, Alli DiGregorio, Chuanjing Hu, Hanxing Jiang, Tong Liu, Tim Ngo, Artur Olechno, Andres Richa, Jaewon Saw, Laura Simandl, Sijin Wang

**Doctoral (Program)**

Anjali Bhattacharjee, Corinne Bowers, Rodrigo Silva Lopez, Ganyu Teng

# Publications

## PUBLICATIONS

- **A framework for time-varying induced seismicity risk assessment, with application in Oklahoma** *BULLETIN OF EARTHQUAKE ENGINEERING*
  Gupta, A., Baker, J. W.
  2019; 17 (8): 4475–93
- **Improving FEMA P-58 non-structural component fragility functions and loss predictions (vol 17, pg 1941, 2019)** *BULLETIN OF EARTHQUAKE ENGINEERING*
  Cremen, G., Baker, J. W.
  2019; 17 (4): 1961–62
- **Improving FEMA P-58 non-structural component fragility functions and loss predictions** *BULLETIN OF EARTHQUAKE ENGINEERING*
  Cremen, G., Baker, J. W.
  2019; 17 (4): 1941–60
- **A Methodology for Evaluating Component-Level Loss Predictions of the FEMA P-58 Seismic Performance Assessment Procedure** *EARTHQUAKE SPECTRA*
  Cremen, G., Baker, J. W.
  2019; 35 (1): 193–210
- **An optimization-based decision support framework for coupled pre- and post-earthquake infrastructure risk management** *STRUCTURAL SAFETY*
  Gomez, C., Baker, J. W.
  2019; 77: 1–9
- **Quantifying the benefits of building instruments to FEMA P-58 rapid post-earthquake damage and loss predictions** *ENGINEERING STRUCTURES*
  Cremen, G., Baker, J. W.
  2018; 176: 243–53
- **Unification of Seismic Performance Estimation and Real Estate Investment Analysis to Model Post-Earthquake Building Repair Decisions** *EARTHQUAKE SPECTRA*
  Markhvida, M., Baker, J. W.
  2018; 34 (4): 1787–1808
- **Consideration and Propagation of Ground Motion Selection Epistemic Uncertainties to Seismic Performance Metrics** *EARTHQUAKE SPECTRA*
  Tarbali, K., Bradley, B. A., Baker, J. W.
  2018; 34 (2): 587–610
- **Modeling spatially correlated spectral accelerations at multiple periods using principal component analysis and geostatistics** *EARTHQUAKE ENGINEERING & STRUCTURAL DYNAMICS*
  Markhvida, M., Ceferino, L., Baker, J. W.
  2018; 47 (5): 1107–23
- **Spatial and Spectral Interpolation of Ground-Motion Intensity Measure Observations** *BULLETIN OF THE SEISMOLOGICAL SOCIETY OF AMERICA*
  Worden, B., Thompson, E. M., Baker, J. W., Bradley, B. A., Luco, N., Wald, D. J.
  2018; 108 (2): 866–75
- **An Improved Algorithm for Selecting Ground Motions to Match a Conditional Spectrum** *JOURNAL OF EARTHQUAKE ENGINEERING*
  Baker, J. W., Lee, C.
  2018; 22 (4): 708–23
- **Incorporating Induced Seismicity Source Models and Ground Motion Predictions to Forecast Dynamic Regional Risk**
  Baker, J. W., Gupta, A., Brandenberg, S. J., Manzari, M. T.
  AMER SOC CIVIL ENGINEERS.2018: 20–28
- **Assessing Ground-Motion Amplitudes and Attenuation for Small-to-Moderate Induced and Tectonic Earthquakes in the Central and Eastern United States** *SEISMOLOGICAL RESEARCH LETTERS*
  Gupta, A., Baker, J. W., Ellsworth, W. L.
  2017; 88 (5): 1379–89

- **EARTHQUAKE ENGINEERING PRACTICE Guidance on the Utilization of Earthquake-Induced Ground Motion Simulations in Engineering Practice** *EARTHQUAKE SPECTRA*
  Bradley, B. A., Pettinga, D., Baker, J. W., Fraser, J.
  2017; 33 (3): 809–35
- **Response History Analysis for the Design of New Buildings in the NEHRP Provisions and ASCE/SEI 7 Standard: Part II - Structural Analysis Procedures and Acceptance Criteria** *EARTHQUAKE SPECTRA*
  Haselton, C. B., Fry, A., Hamburger, R. O., Baker, J. W., Zimmerman, R. B., Luco, N., Elwood, K. J., Hooper, J. D., Charney, F. A., Pekelnicky, R. G., Whittaker, A. S.
  2017; 33 (2): 397–417
- **Response History Analysis for the Design of New Buildings in the NEHRP Provisions and ASCE/SEI 7 Standard: Part III - Example Applications Illustrating the Recommended Methodology** *EARTHQUAKE SPECTRA*
  Zimmerman, R. B., Baker, J. W., Hooper, J. D., Bono, S., Haselton, C. B., Engel, A., Hamburger, R. O., Celikbas, A., Jalalian, A.
  2017; 33 (2): 419–47
- **Intensity Measure Correlations Observed in the NGA-West2 Database, and Dependence of Correlations on Rupture and Site Parameters** *EARTHQUAKE SPECTRA*
  Baker, J. W., Bradley, B. A.
  2017; 33 (1): 145-156
- **Estimating spatially varying event rates with a change point using Bayesian statistics: Application to induced seismicity** *STRUCTURAL SAFETY*
  Gupta, A., Baker, J. W.
  2017; 65: 1-11
- **Spectral Variability and Its Relationship to Structural Response Estimated from Scaled and Spectrum-Matched Ground Motions** *EARTHQUAKE SPECTRA*
  Seifried, A. E., Baker, J. W.
  2016; 32 (4): 2191-2205
- **Quantifying the impacts of modeling uncertainties on the seismic drift demands and collapse risk of buildings with implications on seismic design checks** *EARTHQUAKE ENGINEERING & STRUCTURAL DYNAMICS*
  Gokkaya, B. U., Baker, J. W., Deierlein, G. G.
  2016; 45 (10): 1661-1683
- **Impact of hazard-consistent ground motion duration in structural collapse risk assessment** *EARTHQUAKE ENGINEERING & STRUCTURAL DYNAMICS*
  Chandramohan, R., Baker, J. W., Deierlein, G. G.
  2016; 45 (8): 1357-1379
- **Bayesian Treatment of Induced Seismicity in Probabilistic Seismic-Hazard Analysis** *BULLETIN OF THE SEISMOLOGICAL SOCIETY OF AMERICA*
  Baker, J. W., Gupta, A.
  2016; 106 (3): 860-870
- **Quantifying the Influence of Ground Motion Duration on Structural Collapse Capacity Using Spectrally Equivalent Records** *EARTHQUAKE SPECTRA*
  Chandramohan, R., Baker, J. W., Deierlein, G. G.
  2016; 32 (2): 927-950
- **Coupling mode-destination accessibility with seismic risk assessment to identify at-risk communities** *RELIABILITY ENGINEERING & SYSTEM SAFETY*
  Miller, M., Baker, J. W.
  2016; 147: 60-71
- **A predictive model for fling-step in near-fault ground motions based on recordings and simulations** *SOIL DYNAMICS AND EARTHQUAKE ENGINEERING*
  Burks, L. S., Baker, J. W.
  2016; 80: 119-126
- **Rational Design Spectra for Structural Reliability Assessment Using the Response Spectrum Method** *EARTHQUAKE SPECTRA*
  Loth, C., Baker, J. W.
  2015; 31 (4): 2007-2026
- **Ground motion selection for simulation-based seismic hazard and structural reliability assessment** *EARTHQUAKE ENGINEERING & STRUCTURAL DYNAMICS*

Bradley, B. A., Burks, L. S., Baker, J. W.
2015; 44 (13): 2321-2340

- **Evaluation of Hybrid Broadband Ground Motion Simulations for Response History Analysis and Design** *EARTHQUAKE SPECTRA*
  Burks, L. S., Zimmerman, R. B., Baker, J. W.
  2015; 31 (3): 1691-1710

- **Characterizing and Responding to Seismic Risk Associated with Earthquakes Potentially Triggered by Fluid Disposal and Hydraulic Fracturing** *SEISMOLOGICAL RESEARCH LETTERS*
  Walters, R. J., Zoback, M. D., Baker, J. W., Beroza, G. C.
  2015; 86 (4): 1110-1118

- **Ground-motion intensity and damage map selection for probabilistic infrastructure network risk assessment using optimization** *EARTHQUAKE ENGINEERING & STRUCTURAL DYNAMICS*
  Miller, M., Baker, J.
  2015; 44 (7): 1139-1156

- **Ground motion directionality in the 2010-2011 Canterbury earthquakes** *EARTHQUAKE ENGINEERING & STRUCTURAL DYNAMICS*
  Bradley, B. A., Baker, J. W.
  2015; 44 (3): 371-384

- **Efficient Analytical Fragility Function Fitting Using Dynamic Structural Analysis** *EARTHQUAKE SPECTRA*
  Baker, J. W.
  2015; 31 (1): 579-599

- **An Efficient Algorithm to Identify Strong-Velocity Pulses in Multicomponent Ground Motions** *BULLETIN OF THE SEISMOLOGICAL SOCIETY OF AMERICA*
  Shahi, S. K., Baker, J. W.
  2014; 104 (5): 2456-2466

- **NGA-West2 Models for Ground Motion Directionality** *EARTHQUAKE SPECTRA*
  Shahi, S. K., Baker, J. W.
  2014; 30 (3): 1285-1300

- **Validation of Ground-Motion Simulations through Simple Proxies for the Response of Engineered Systems** *BULLETIN OF THE SEISMOLOGICAL SOCIETY OF AMERICA*
  Burks, L. S., Baker, J. W.
  2014; 104 (4): 1930-1946

- **NGA-West2 Research Project** *EARTHQUAKE SPECTRA*
  Bozorgnia, Y., Abrahamson, N. A., Al Atik, L., Ancheta, T. D., Atkinson, G. M., Baker, J. W., Baltay, A., Boore, D. M., Campbell, K. W., Chiou, B. S., Darragh, R., Day, S., Donahue, et al
  2014; 30 (3): 973-987

- **Comparison of NGA-West2 Directivity Models** *EARTHQUAKE SPECTRA*
  Spudich, P., Rowshandel, B., Shahi, S. K., Baker, J. W., Chiou, B. S.
  2014; 30 (3): 1199-1221

- **Rapid Earthquake Characterization Using MEMS Accelerometers and Volunteer Hosts Following the M 7.2 Darfield, New Zealand, Earthquake** *BULLETIN OF THE SEISMOLOGICAL SOCIETY OF AMERICA*
  Lawrence, J. F., Cochran, E. S., Chung, A., Kaiser, A., Christensen, C. M., Allen, R., Baker, J. W., Fry, B., Heaton, T., Kilb, D., Kohler, M. D., Taufer, M.
  2014; 104 (1): 184-192

- **Rapid Earthquake Characterization Using MEMS Accelerometers and Volunteer Hosts Following the M 7.2 Darfield, New Zealand, Earthquake**
  Lawrence, J., F., Cochran, E., S., Chung, A., Kaiser, A., Christensen, C., M., Allen, R., Baker, J. W.
  2014; 1 (104): 1

- **A modular framework for performance-based durability engineering: From exposure to impacts** *STRUCTURAL SAFETY*
  Flint, M. M., Baker, J. W., Billington, S. L.
  2014; 50: 78-93

- **Stochastic Model for Earthquake Ground Motion Using Wavelet Packets** *BULLETIN OF THE SEISMOLOGICAL SOCIETY OF AMERICA*
  Yamamoto, Y., Baker, J. W.
  2013; 103 (6): 3044-3056

- **Conditional spectrum-based ground motion selection. Part II: Intensity-based assessments and evaluation of alternative target spectra** *EARTHQUAKE ENGINEERING & STRUCTURAL DYNAMICS*
  Lin, T., Haselton, C. B., Baker, J. W.
  2013; 42 (12): 1867-1884

- **Conditional spectrum-based ground motion selection. Part I: Hazard consistency for risk-based assessments** *EARTHQUAKE ENGINEERING & STRUCTURAL DYNAMICS*
  Lin, T., Haselton, C. B., Baker, J. W.
  2013; 42 (12): 1847-1865

- **Use of Fragile Geologic Structures as Indicators of Unexceeded Ground Motions and Direct Constraints on Probabilistic Seismic Hazard Analysis** *BULLETIN OF THE SEISMOLOGICAL SOCIETY OF AMERICA*
  Baker, J. W., Abrahamson, N. A., Whitney, J. W., Board, M. P., Hanks, T. C.
  2013; 103 (3): 1898-1911

- **Conditional Spectrum Computation Incorporating Multiple Causal Earthquakes and Ground-Motion Prediction Models** *BULLETIN OF THE SEISMOLOGICAL SOCIETY OF AMERICA*
  Lin, T., Harmsen, S. C., Baker, J. W., Luco, N.
  2013; 103 (2A): 1103-1116

- **A spatial cross-correlation model of spectral accelerations at multiple periods** *EARTHQUAKE ENGINEERING & STRUCTURAL DYNAMICS*
  Loth, C., Baker, J. W.
  2013; 42 (3): 397-417

- **Stochastic model for earthquake ground motion using wavelet packets.** *Bulletin of the Seismological Society of America*
  Yamamoto, Y., Baker, J., W.
  2013; 6 (103): 1

- **A Framework for Selecting A Suite Of Ground-Motion Intensity Maps Consistent With Both Ground-Motion Intensity And Network Performance Hazards For Infrastructure Networks.**
  Miller, M., Baker, J., W.
  2013

- **A spatial cross-correlation model of ground motion spectral accelerations at multiple periods.** *Earthquake Engineering & Structural Dynamics*
  Loth, C., Baker, J., W.
  2013; 3 (42): 397–417

- **Trade-offs in ground motion selection techniques for collapse assessment of structures.**
  Baker, J., W.
  2013

- **Introducing Adaptive Incremental Dynamic Analysis: A new tool for linking ground motion selection and structural response assessment.**
  Lin, T., Baker, J., W.
  2013

- **Incorporating model uncertainty in collapse reliability assessment of buildings.**
  Ugurhan, B., Baker, J., W., Deierlein, G., G.
  2013

- **Extreme Ground Motions And Yucca Mountain** *US Geological Survey, Reston, Virginia*
  Hanks, T., C., Abrahamson, N., A., Baker, J., W., Boore, D., M., Board, M., Brune, J., N.
  2013: 1

- **Risk communication for critical civil infrastructure systems.**
  Baker, J., W., Coray, J., DeStefano, P., Duenas-Osorio, L., King, S., Manuel, L.
  2013

- **Directionality models for the NGA West 2 project.**
  Shahi, S., K., Baker, J., W.
  2013
- **Reliability-based calibration of design seismic response spectra and structural acceptance criteria.**
  Loth, C., Baker, J., W.
  2013
- **Final Report of the NGA-West2 Directivity Working Group.**
  Spudich, P., Bayless, J., Baker, J., W., Chiou, B., S. J., Rowshandel, B., Shahi, S., K.
  2013
- **Influence of ground motion spectral shape and duration on seismic collapse risk.**
  Chandramohan, R., Lin, T., Baker, J., W., Deierlein, G., G.
  2013
- **Influence of Ground Motion Duration on the Collapse Response of Bridge Structures.**
  Chandramohan, R., Baker, J., W., Deierlein, G., G.
  2013
- **Occurrence of negative epsilon in seismic hazard analysis deaggregation, and its impact on target spectra computation** *EARTHQUAKE ENGINEERING & STRUCTURAL DYNAMICS*
  Burks, L. S., Baker, J. W.
  2012; 41 (8): 1241-1256
- **Characterization of random fields and their impact on the mechanics of geosystems at multiple scales** *INTERNATIONAL JOURNAL FOR NUMERICAL AND ANALYTICAL METHODS IN GEOMECHANICS*
  Chen, Q., Seifried, A., Andrade, J. E., Baker, J. W.
  2012; 36 (2): 140-165
- **Preliminary NGA-West 2 models for ground-motion directionality.**
  Shahi, S., K., Baker, J., W.
  2012
- **GEM-PEER Global GMPEs Project Guidance for Including Near-Fault Effects in Ground Motion Prediction Models.**
  Baker, J., W., Bozorgnia, Y., Di Alessandro, C., Chiou, B., S. J., Erdik, M., Somerville, P., G.
  2012
- **Directivity models produced for the Next Generation Attenuation West 2 (NGA-West 2) project.**
  Spudich, P., Watson-Lamprey, J., Somerville, P., G., Bayless, J., Shahi, S., K., Baker, J., W.
  2012
- **A probabilistic framework for performance-based durability engineering.** *Hygrothermal Behaviour, Building Pathology and Durability, Building Pathology and Rehabilitation, Springer-Verlag*
  Flint, M., Baker, J., W., Billington, S., L.
  2012: 1
- **Seismic Considerations and Evaluation Approach for 'Isolated' Rooftop PV Arrays.**
  Walters, M., Berkowitz, R., Lau, D., Lee, W., Baker, J., W.
  2012
- **Preliminary Assessment of Ground Motion Duration Effects on Structural Collapse.**
  Foschaar, J., C., Baker, J., W., Deierlein, G., G.
  2012
- **Defining a consistent strategy to model ground motion parameters for the GEM-PEER Global GMPEs Project.**
  Akkar, S., D., Douglas, J., Di Alessandro, C., Campbell, K., W., Somerville, P., G., Cotton, F., Baker, J. W.
  2012
- **Selecting and Scaling Earthquake Ground Motions for Performing Response-History Analyses.**

Haselton, C., B., Whittaker, A., S., Hortacsu, A., Baker, J., W., Bray, J., D., Grant, D., N.
2012

- **Correlation of response spectral values in Japanese ground motions** *EARTHQUAKES AND STRUCTURES*
  Jayaram, N., Baker, J. W., Okano, H., Ishida, H., McCann, M. W., Mihara, Y.
  2011; 2 (4): 357-376

- **A Computationally Efficient Ground-Motion Selection Algorithm for Matching a Target Response Spectrum Mean and Variance** *EARTHQUAKE SPECTRA*
  Jayaram, N., Lin, T., Baker, J. W.
  2011; 27 (3): 797-815

- **Representation of Bidirectional Ground Motions for Design Spectra in Building Codes** *EARTHQUAKE SPECTRA*
  Stewart, J. P., Abrahamson, N. A., Atkinson, G. M., Baker, J. W., Boore, D. M., Bozorgnia, Y., Campbell, K. W., Comartin, C. D., Idriss, I. M., Lew, M., Mehrain, M., Moehle, J. P., Naeim, et al
  2011; 27 (3): 927-937

- **An Empirically Calibrated Framework for Including the Effects of Near-Fault Directivity in Probabilistic Seismic Hazard Analysis** *BULLETIN OF THE SEISMOLOGICAL SOCIETY OF AMERICA*
  Shahi, S. K., Baker, J. W.
  2011; 101 (2): 742-755

- **Conditional Mean Spectrum: Tool for Ground-Motion Selection** *JOURNAL OF STRUCTURAL ENGINEERING-ASCE*
  Baker, J. W.
  2011; 137 (3): 322-331

- **Accounting for Ground-Motion Spectral Shape Characteristics in Structural Collapse Assessment through an Adjustment for Epsilon** *JOURNAL OF STRUCTURAL ENGINEERING-ASCE*
  Haselton, C. B., Baker, J. W., Liel, A. B., Deierlein, G. G.
  2011; 137 (3): 332-344

- **Effects of earthquake source geometry and site conditions on spatial correlation of earthquake ground motion hazard.**
  Baker, J., W., Miller, M.
  2011

- **Uncertainty treatment in earthquake modelling using Bayesian probabilistic networks** *GEORISK-ASSESSMENT AND MANAGEMENT OF RISK FOR ENGINEERED SYSTEMS AND GEOHAZARDS*
  Bayraktarli, Y. Y., Baker, J. W., Faber, M. H.
  2011; 5 (1): 44–58

- **Characterization of random fields at multiple scales: An efficient conditional simulation procedure and applications in geomechanics**
  Baker, J. W., Seifried, A., Andrade, J. E., Chen, Q., Faber, M. H., Kohler, J., Nishijima, K.
  CRC PRESS-TAYLOR & FRANCIS GROUP.2011: 1145–51

- **Seismic risk assessment of spatially-distributed systems using ground-motion models fitted considering spatial correlation**
  Jayaram, N., Baker, J. W., Faber, M. H., Kohler, J., Nishijima, K.
  CRC PRESS-TAYLOR & FRANCIS GROUP.2011: 1462–68

- **Regression models for predicting the probability of near-fault earthquake ground motion pulses, and their period**
  Shahi, S. K., Baker, J. W., Faber, M. H., Kohler, J., Nishijima, K.
  CRC PRESS-TAYLOR & FRANCIS GROUP.2011: 1544–52

- **Stochastic model for earthquake ground motions using wavelet packets.**
  Yamamoto, Y., Baker, J., W.
  2011

- **Characterization of random fields at multiple scales: an efficient conditional simulation procedure and applications in geomechanics.**
  Baker, J., W., Seifried, A., Andrade, J., E., Chen, Q.
  2011

- **Spatial cross-correlation of spectral accelerations at multiple periods: model development and risk assessments considering secondary earthquake effects.** *Project report, USGS award G10AP00046.*
  Loth, C., Baker, J., W.
  2011: 1
- **Capacity design in seismic resistant steel buildings: a reliability-based methodology to establish capacity-design factors.** *EUROSTEEL*
  Victorsson, V., Deierlein, G., G., Baker, J., W.
  2011: 1
- **Seismic risk assessment of spatially-distributed systems using ground-motion models fitted considering spatial correlation.**
  Jayaram, N., Baker, J., W.
  2011
- **Regression models for predicting the probability of near-fault earthquake ground motion pulses, and their period.**
  Shahi, S., K., Baker, J., W.
  2011
- **Probabilistic Seismic Hazard Deaggregation of Ground Motion Prediction Models.**
  Lin, T., Baker, J., W.
  2011
- **New Ground Motion Selection Procedures and Selected Motions for the PEER Transportation Research Program.** *PEER Technical Report 2011/03.*
  Baker, J., W., Lin, T., Shahi, S., K., Jayaram, N.
  2011: 1
- **Uncertainty treatment in earthquake modeling using Bayesian probabilistic networks.** *GeoRisk*
  Bayraktarli, Y., Y., Baker, J., W., Faber, M., H.
  2011; 1 (5): 1
- **Selecting and Scaling Earthquake Ground Motions for Performing Response-History Analyses. NIST GCR 11-917-15.** *Prepared by the NEHRP Consultants Joint Venture for the National Institute of Standards and Technology*
  NIST, N.
  2011: 1
- **A FORM-based analysis of lifeline networks using a multivariate seismic intensity model.**
  Miller, M., Baker, J., W., Lim, H., W., Song, J., Jayaram, N.
  2011
- **Considering Spatial Correlation in Mixed-Effects Regression and the Impact on Ground-Motion Models** *BULLETIN OF THE SEISMOLOGICAL SOCIETY OF AMERICA*
  Jayaram, N., Baker, J. W.
  2010; 100 (6): 3295-3303
- **Efficient sampling and data reduction techniques for probabilistic seismic lifeline risk assessment** *EARTHQUAKE ENGINEERING & STRUCTURAL DYNAMICS*
  Jayaram, N., Baker, J. W.
  2010; 39 (10): 1109-1131
- **Reliability-based design and optimization of adaptive marine structures** *COMPOSITE STRUCTURES*
  Young, Y. L., Baker, J. W., Motley, M. R.
  2010; 92 (2): 244-253
- **Stochastic model for earthquake ground motions using wavelet packets.**
  Yamamoto, Y., Baker, J., W.
  2010
- **Ground-Motion Selection for PEER Transportation Research Program.**
  Jayaram, N., Baker, J., W.
  2010

- **Signal Processing and Probabilistic Seismic Hazard Analysis Tools for Characterizing the Impact of Near-Fault Directivity.**
  Shahi, S., K., Baker, J., W.
  2010
- **Characterizing spatial cross-correlation between ground-motion spectral accelerations at multiple periods.**
  Jayaram, N., Baker, J., W.
  2010
- **Advancement of hazard-consistent ground motion selection: refinements to conditional mean spectrum calculations.** *PEER Annual Meeting*
  Lin, T., Baker, J., W.
  2010: 1
- **Correlation model for spatially distributed ground-motion intensities** *EARTHQUAKE ENGINEERING & STRUCTURAL DYNAMICS*
  Jayaram, N., Baker, J. W.
  2009; 38 (15): 1687-1708
- **A Probabilistic Method for the Magnitude Estimation of a Historical Damaging Earthquake Using Structural Fragility Functions** *BULLETIN OF THE SEISMOLOGICAL SOCIETY OF AMERICA*
  Ryu, H., Kim, J. K., Baker, J. W.
  2009; 99 (2A): 520-537
- **Incorporating modeling uncertainties in the assessment of seismic collapse risk of buildings** *STRUCTURAL SAFETY*
  Liel, A. B., Haselton, C. B., Deierlein, G. G., Baker, J. W.
  2009; 31 (2): 197-211
- **Prediction of Inelastic Structural Response Using an Average of Spectral Accelerations.**
  Bianchini, M., Diotallevi, P., Baker, J., W.
  2009
- **Efficient sampling techniques for seismic risk assessment of lifelines.**
  Jayaram, N., Baker, J., W.
  2009
- **Reliability-based design and optimization of self-twisting composite marine rotors.**
  Motley, M., R., Young, Y., L., Baker, J., W.
  2009
- **Review of Recent Ground Motion Studies for Performance-based Engineering.**
  Baker, J., W.
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