

Bulletin

Seismological Society of America

October 2014

Volume 104 · Number 5

## Bulletin of the Seismological Society of America

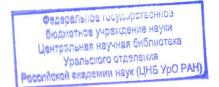
Volume 104 · Number 5 · October 2014

## Contents

(E) indicates that online material is available in the electronic edition of BSSA

## **Articles** 2149 The 1531 Lisbon Earthquake: A Tsunami in the Tagus Estuary? M. A. Baptista, J. M. Miranda, and J. Batlló 2162 E The 2001-Present Induced Earthquake Sequence in the Raton Basin of Northern New Mexico and Southern Colorado Justin L. Rubinstein, William L. Ellsworth, Arthur McGarr, and Harley M. Benz 2182 Limited Dynamic Earthquake Triggering in the Socorro Magma Body Region, Rio Grande Rift, New Mexico Emily A. Morton and Susan L. Bilek Mysterious Tremor-Like Signals Seen on the Reelfoot Fault, Northern Tennessee 2194 Blaine M. Bockholt, Charles A. Langston, Heather R. DeShon, Steven Horton, and Mitch Withers A Low-Dispersive Symplectic Partitioned Runge-Kutta Method for Solving 2206 Seismic-Wave Equations: I. Scheme and Theoretical Analysis Xiao Ma, Dinghui Yang, Guojie Song, and Meixia Wang The Role of the Rotational Inertia on the Seismic Resistance of Free-Standing 2226 Rocking Columns and Articulated Frames Nicos Makris A Study of the Sensitivity of Response Spectral Amplitudes on Seismological 2240 Parameters Using Algorithmic Differentiation Christian Molkenthin, Frank Scherbaum, Andreas Griewank, Nicolas Kuehn, and Peter Stafford 2253 Coherence of Teleseismic P and S waves across the Transportable Array Charles A. Langston 2266 Overtone Interference in Array-Based Love-Wave Phase Measurements Anna Foster, Meredith Nettles, and Göran Ekström Geophysical Constraints on the Seismotectonics of the Sikkim Himalaya 2278 B. R. Arora, Sanjay K. Prajapati, and C. D. Reddy 2288 Application of Horizontal-to-Vertical Spectral Ratios of Earthquake Ground Motions to Identify Subsurface Structures at and around the K-NET Site in Tohoku, Japan

Fumiaki Nagashima, Shinichi Matsushima, Hiroshi Kawase, Francisco J. Sánchez-Sesma, Takashi Hayakawa, Toshimi Satoh, and Mitsutaka Oshima



| The Stress State of the Northwest Geysers, California Geothermal Field, and Implications for Fault-Controlled Fluid Flow Katie Boyle and Mark Zoback   | 2303 |   |
|--|------|---|
| A $V_{S30}$ Map for California with Geologic and Topographic Constraints $E.\ M.\ Thompson,\ D.\ J.\ Wald,\ and\ C.\ B.\ Worden$   | 2313 | E |
| Imaging P and S Attenuation in the Sacramento–San Joaquin Delta Region,<br>Northern California  Donna Eberhart-Phillips, Clifford Thurber, and Jon B. Fletcher   | 2322 | E |
| Influence of the $V_S$ Profiles beyond 30 m Depth on Linear Site Effects:<br>Assessment from the KiK-net Data<br>Julie Régnier, Luis Fabian Bonilla, Etienne Bertrand, and Jean-François Semblat   | 2337 |   |
| Three-Dimensional Seismic-Velocity Model for the Unconsolidated Mississippi<br>Embayment Sediments from H/V Ambient Noise Measurements<br>Charles A. Langston and Stephen P. Horton  | 2349 |   |
| Magnitude Limits of Subduction Zone Earthquakes Yufang Rong, David D. Jackson, Harold Magistrale, and Chris Goldfinger   | 2359 |   |
| Moment Magnitude–Rupture Area Scaling and Stress-Drop Variations for Earthquakes in the Mediterranean Region <i>K. I. Konstantinou</i>   | 2378 | E |
| A Generalization of the Double-Corner-Frequency Source Spectral Model and Its Use in the SCEC BBP Validation Exercise  David M. Boore, Carola Di Alessandro, and Norman A. Abrahamson  | 2387 |   |
| The Destiny of a Clast within a Molten Pseudotachylyte Vein<br>Andrea Bizzarri   | 2399 |   |
| A Study of Microseisms Induced by Typhoon Nanmadol Using Ocean-Bottom<br>Seismometers  Jing-Yi Lin, Tzu-Chuan Lee, Hsin-Sung Hsieh, Yen-Fu Chen, Yi-Chin Lin, Hsin-Hua<br>Lee, and Yi-Ying Wen   | 2412 |   |
| Performance of an Optical Seismometer from 1 $\mu$ Hz to 10 Hz<br>Jonathan Berger, Peter Davis, Rudolf Widmer-Schnidrig, and Mark Zumberge   | 2422 |   |
| Site Effects and Peak Ground Accelerations Observed in Guadalajara, Mexico, for the 9 October 1995 $M_{\rm w}$ 8 Colima–Jalisco, Earthquake $M$ . Chavez, S. Garcia, E. Cabrera, M. Ashworth, N. Perea, A. Salazar, E. Chavez, J. Saborio-Ulloa, and J. Saborio-Ortega | 2430 | E |
| An Efficient Algorithm to Identify Strong-Velocity Pulses in Multicomponent<br>Ground Motions<br>Shrey K. Shahi and Jack W. Baker  | 2456 | E |
| A Study of Site Effects in Ilan, Taiwan, Based on Attenuation Relationships of Spectral Acceleration  Kun-Sung Liu, Yi-Ben Tsai, Chien-Hsin Chang, and Po-Shen Lin   | 2467 | E |
| Assessment of Coherency for Bidirectional Horizontal Ground Motions and Its Application for Simulating Records at Multiple Stations  H. P. Hong and T. J. Liu  | 2491 |   |
| Evaluation of Site Effects on Strong-Motion Records in Concepción during the 2010 Maule, Chile, Earthquake Saburoh Midorikawa, Hiroaki Yamanaka, Kosuke Chimoto, Rafael Riddell, Hiroyuki Miura, and Koichiro Saguchi  | 2503 |   |

| Test of Goodness of the NGA Ground-Motion Equations to Predict the Strong Motions of the 2012 Ahar–Varzaghan Dual Earthquakes in Northwestern Iran Mehdi Mousavi, Hamid Zafarani, Sahar Rahpeyma, and Alireza Azarbakht  | 2512   |
|--|--------|
| Relation of Landslides Triggered by the Kiholo Bay Earthquake to Modeled Ground Motion  Edwin L. Harp, Stephen H. Hartzell, Randall W. Jibson, Leonardo Ramirez-Guzman, and Robert G. Schmitt  | 2529   |
| Path Durations for Use in the Stochastic-Method Simulation of Ground Motions<br>David M. Boore and Eric M. Thompson  | 2541   |
| Application of Seismic Array Processing to Earthquake Early Warning<br>L. Meng, R. M. Allen, and JP. Ampuero   | 2553   |
| Comment and Reply  |        |
| Comment on "Estimation of Ground Motion in Mexico City from a Repeat of the $M \sim 7.0$ Acambay Earthquake of 1912" by S. K. Singh, A. Iglesias, M. Ordaz, X. Pérez-Campos, and L. Quintanar Max Suter  | 2562   |
| Reply to "Comment on 'Estimation of Ground Motion in Mexico City from a Repeat of the $M \sim 7.0$ Acambay Earthquake of 1912' by S. K. Singh, A. Iglesias, M. Ordaz, X. Pérez-Campos, and L. Quintanar" by M. Suter S. K. Singh, A. Iglesias, M. Ordaz, X. Pérez-Campos, and L. Quintanar | 2565   |
| Short Notes  |        |
| Phase-Weighted Stacking Applied to Low-Frequency Earthquakes  Clifford H. Thurber, Xiangfang Zeng, Amanda M. Thomas, and Pascal Audet  | 2567   |
| Green's Functions for Surface Waves in a Generic Velocity Structure Victor C. Tsai and Sarun Atiganyanun   | 2573   |
| Three-Dimensional Compressional Attenuation Model $(Q_P)$ for the Salton Trough, Southern California $Guoqing\ Lin$  | 2579 E |
| Northeast-Oriented Transpression Structure in the Northern New Madrid Seismic Zone: Extension of a Shear Zone across the Reelfoot Fault Stepover Arm Edward W. Woolery and Ali Almayahi  | 2587   |
| Velocity Structure of the Saint Elias, Alaska, Region from Local Earthquake Tomography  Irina Zabelina, Natalia A. Ruppert, and Jeffrey T. Freymueller   | 2597   |
| M-log A Models and Other Curiosities  Thomas C. Hanks and William H. Bakun   | 2604   |
| A Review Study of the Source Parameters of the 23 August 2011 $M_{\rm w}$ 5.7 Virginia Earthquake Dariush Motazedian and Shutian Ma  | 2611   |
| Shaking from Injection-Induced Earthquakes in the Central and Eastern United States  Susan E. Hough  | 2619   |
| The Rupture Mode of the Shallow Large-Slip Surge of the Tohoku-Oki Earthquake  Christopher H. Scholz   | 2627   |