RECENT ADVANCES IN VOLCANO MONITORING AT THE MONTSERRAT VOLCANO OBSERVATORY, WEST INDIES

THOMPSON, G., DUNKLEY, P., EDMONDS, M. and HERD, R.A., Montserrat Volcano Observatory, Montserrat, West Indies, glenn@mvo.ms

The Montserrat Volcano Observatory (MVO) monitors the Soufriere Hills Volcano (SHV). Given that the current eruption of the SHV shows no sign of abating, and that the lava dome is now more voluminous than at any previous stage, it is important that MVO continues to develop new and better methods of volcano monitoring to enable the people of Montserrat to live safely with their volcano. Recent advances in the gas, visual and seismic monitoring programs establish the MVO as a leading volcano observatory. A network of ultra-violet spectrometers in conjunction with acquisition software written by the MVO has made it possible to sample the sulphur dioxide flux with a time resolution of ~ 1 minute. For the first time it may be possible to recognize and detect characteristic degassing signals.

Photographic stations record high quality digital images of the volcano from multiple fixed positions every minute, day and night. These images, accessible in real-time over the internet, make it possible to determine the trajectory of a pyroclastic flow within seconds of receiving an alarm. A remarkable sequence of images shows how the lava dome has grown and collapsed since March 2002. The backbone of the MVO monitoring programme continues to be seismic monitoring. Volcano alarm messages tell staff the magnitude of significant seismic events, and are sent within minutes by email and cellphone. Web pages include near-real-time plots of multiple seismic parameters. Diagnostic alarm messages alert staff to problems with any part of the seismic monitoring system. Critical software auto-restarts and is backed-up by UPS and generator to ensure robustness. This paper outlines these recent advances in the monitoring of the SHV.

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### SSA 2003

**Program for the Annual Meeting**  
**Caribe Hilton Hotel, San Juan, Puerto**  
**30 April – 2 May 2003 (Wednesday–Friday)**

Presenter is indicated in **bold**. Invited talks are indicated by asterisks (*).

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#### Program

**Wednesday am, 30 April 2003—San Gerónimo B**  
**Opening Plenary Session**

8:00 *100 Years of Seismological Investigation in Puerto Rico. Asencio, Eugenio.*

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**Wednesday am, 30 April 2003—San Gerónimo A**  
**Seismic Hazard**  
**Presiding:** Catherine Snelson and Ned Field

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<td>A Seismic Hazard Assessment for Italy Based on Historical Seismicity.</td>
<td>Mueller, C. S., and Akinci, A.</td>
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<td>9:15</td>
<td>Seismic Hazard Assessment of Khorasan Province. Shoja-Taheri, J.</td>
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<td>9:45</td>
<td>OpenSHA: A Developing, Community-modeling Environment for Seismic-hazard Analysis. Field, E. H. and Jordan, T. H.</td>
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**Wednesday am, 30 April 2003—San Gerónimo B**  
**Puerto Rico Earthquake Hazard: What Do We Know, and Where Do We Go From Here?**  
**Presiding:** José Martínez-Cruzado and Carol Prentice

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<tr>
<td>9:00</td>
<td><em>Catalog of Felt Earthquakes for Puerto Rico and Neighboring Islands 1492–1899 with Additional Information for Some 20th-century Earthquakes. McCann, W. R.</em></td>
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<td>9:15</td>
<td><em>Block Rotation, Plate Tear, and Dynamic Topography in the Puerto Rico Trench. ten Brink, U. S., Martin, J. L., Gurrola, H., Dillon, W., and Huerfano, V. A.</em></td>
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<td>9:30</td>
<td><em>Early Miocene to Recent Plate Tectonic Animation of Highly Oblique Collision between the Southeastern Bahama Carbonate Platform and the Puerto Rico-Virgin Islands-Hispaniola Region. Mann, P., Gahagan, L., and Grindlay, N. R.</em></td>
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<td>9:45</td>
<td>Microearthquakes and the Neotectonics of Puerto Rico and the U.S. Virgin Islands, Northeastern Caribbean. McCann, W. R.</td>
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<td>10:30</td>
<td>Focal Mechanisms for Moderate and Small Quakes in the Northeastern Caribbean.</td>
<td>Huerfano, V. A.</td>
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<td>11:00</td>
<td>Using GPS Data to Assign Slip Rates to a Fault Set: Mona Passage, Puerto Rico.</td>
<td>Laforge, R. and McCann, W. R.</td>
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<td>11:45</td>
<td>Reconnaissance Study of Late Quaternary Faulting along the La Cadena de San Francisco Mountain Front (Cerro Goden Fault Zone), Western Puerto Rico.</td>
<td>Mann, P., Prentice, C. S., Hippolyte, J. C., and Lao-Davila, D.</td>
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**Wednesday am, 30 April 2003—San Gerónimo C**

Seismological Studies of the Lithosphere

**Presiding:** Ivan Wong, Walter Mooney, and Garry Rogers

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<td>Density Structure of the Upper Mantle under North America.</td>
<td>Mooney, W. D. and Kaban, M. K.</td>
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<td>9:30</td>
<td>The Seismic Signature of Transient Slips on the Cascadia Subduction Zone.</td>
<td>Rogers, G. C. and Dragert, H.</td>
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<td>9:45</td>
<td>Thermal Control of Shallow Intralab Seismicity: Implications for the Central and Southern Cascadia Subduction Zone.</td>
<td>Wong, I. G. and Harris, R. N.</td>
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<td>10:00</td>
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<td>10:30</td>
<td>Compressional Wave Velocity and Attenuation in the Uppermost Tibetan Mantle Estimated Using Pn Waves Recorded during the INDEPTH II Experiment.</td>
<td>Xie, J.</td>
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**Wednesday pm, 30 April 2003—San Gerónimo A**

Monitoring and Hazards Research at Active Volcanoes

**Presiding:** Mario Ruiz

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<td>Repeating Long-period and Hybrid Earthquakes at Shishaldin Volcano, Alaska.</td>
<td>Caplan-Auerbach, J. and Petersen, T.</td>
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<td>1:45</td>
<td>Patterns of Eruption Mechanics as Mapped by Volcanoquakes.</td>
<td>Grasso, J. R.</td>
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<td>2:00</td>
<td>Coseismic Changes of the Coda Decay Rate and Precursorlike Time Delays in Shear-wave Splitting Associated with Bursts of Seismicity at Mt. Vesuvius, Italy.</td>
<td>Del Pezzo, E., Bianco, F., Saccorotti, G., and Petrosino, S.</td>
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<td>2:30</td>
<td>Crustal Structure and a Zone of Potential Magma Conduit beneath the Taupo Volcanic Region of North Island, New Zealand.</td>
<td>Chiu, J. M., Pujol, J., and Reynolds, M.</td>
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<td>2:45</td>
<td>Structure of Vesuvius (Southern Italy) and Magma Chamber Location from Seismic Tomography and Geochemical-petrological Constraints.</td>
<td>De Natale, Giuseppe G., Troise, C., Mastrolorenzo, G., Chiarabba, C., and Trigila, R.</td>
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<td>3:00</td>
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<td>3:30</td>
<td>Recent Advances in Volcano Monitoring at the Montserrat Volcano Observatory, West Indies.</td>
<td>Thompson, G., Dunkley, P., Edmonds, M., and Herd, R. A.</td>
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**Wednesday pm, 30 April 2003—San Gerónimo B**

Puerto Rico Earthquake Hazard: What Do We Know, and Where Do We Go From Here?

**Presiding:** Carol Prentice and José Martinez-Cruzado

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<tr>
<th>Time</th>
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1:30  *The Role of the Puerto Rico Seismic Network in the Determination and Dissemination of Local Seismic Hazard. von Hillebrandt-Andrade, C. G. and Huerfano, V. A.

1:45  An Overview of the Puerto Rico Strong Motion Network. Martínez-Cruzado, J. A.

2:00  *Developing an Intensity-magnitude Relationship for Puerto Rico. Doser, D. I. and Bakun, W. H.

2:15  *Ground-motion Relations for Puerto Rico. Motazedian, D., and Atkinson, G. M.

2:30  *Probabilistic Seismic Hazard Analysis for Puerto Rico. Crouse, C. B. and Hengesh, J. V.


3:00  Break


3:45  *A Probabilistic Seismic Source Model for Puerto Rico, Part II: Some Probabilistic Results. Laforge, R. and McCann, W. R.

4:00  *Probabilistic Seismic Hazard Maps for Puerto Rico and the U.S. Virgin Islands. Mueller, C. S., Frankel, A. D., Petersen, M. D., and Leyendecker, E. V.

Wednesday pm, 30 April 2003—San Gerónimo C
Earthquake Generation, Fault Behavior, Source Parameters, and Wave Propagation
Presiding: Robert Kovach and Kim Olsen


2:00  Constraints on the Mechanics of the Southern San Andreas Fault System from Velocity and Stress Observations. Becker, T. W., Hardebeck, J. L., and Anderson, G.

2:15  Hypocenter Locations in Finite-source Rupture Models. Mai, P. M., Spudich, P., and Boatwright, J.


Wednesday (all day), 30 April 2003—San Cristobal Jr. Ballroom
Strong Ground Motion
Posters
Presiding: Gail Atkinson and José Martínez-Cruzado

A1  Calibration of the Specific Barrier Model to Earthquakes in Various Tectonic Regions. Halldorsson, B. and Papageorgiou, A. S.

A2  High-frequency Regional S-wave Propagation in Southeastern Canada. Jeon, Y. S. and Herrmann, R. B.

A3  3D Elastic Wave Propagation Modeling Using a Rotated Staggered Stress-velocity Finite-difference Scheme. Pitarka, A.

A4  *PGA and PGV Attenuation Inferred from Northern California ShakeMap Data. Boatwright, J., Bundock, H., Luetgert, J., and Seeksins, L. C.

A5  3D Deterministic Prediction of Ground Motion in the Near Zone of a Steplike Propagating Curvilinear Fault. Bykovtsev, Alexander S. and Katz, Alexander A.


A7  Requirements for Verifying Wave-wave Coupling at Texcoco, Valley of Mexico. Stephenson, B. and Passmore, P. R.

A8  Analyses of Seismic Response to Propagating Pressure Waves at NVAR. Negru, P. T., Herrin, E. T., and Sorrells, G. G.


Wednesday (all day), 30 April 2003—San Cristobal Jr. Ballroom
Seismologic Studies of the Lithosphere
Posters
Presiding: Shane Detweiler

B1  Mapping Mantle Anisotropy with Shear-wave Splitting from Florida to Alberta. Salas, M., Fischer, K. M., Welsh, M., and Wyssession, M. E.


B3  Seismic Anisotropy and Mantle Creep in Young Orogens. Meissner, R., Artemieva, I. M., and Mooney, W. D.

B4  Shear-wave Splitting Analysis along the Karadere-Duzce Branch of the North Anatolian Fault Using Repeating Microearthquakes. Peng, Z., and Ben-Zion, Y.


B7  Uppermost Mantle Velocity and Anisotropy in China: Results from a Dense Chinese National Seismic Network. Chun, K. Y., and Liu, J. S.

B8  Are the Cratonic Margins Vertical? The Case Study of the TESZ from Thermal and Seismic Data. Artemieva, I. M., Mooney, W. D., and Krasnova, M. A.


B10 Tridimensional Mapping of the Moho Discontinuity beneath Southeastern Brazil. Souza, J. L. de, Santos, N. P. dos, and Pacheco, R. P.

B11 Joint Modeling of Receiver Functions and Surface-wave Dispersions with Genetic Algorithm. Chang, S.-J., and Baag, C.-E.

B12 Short-period Surface-wave Tomography in Central Asia and Its Application to Seismic Discrimination. Maceira, M., and Taylor, S. R.


B16 In-situ Shear-wave Velocities from a Combination of F-K and P-tau Methods on an Irregular Array. Abbott, R. E.

Wednesday (all day), 30 April 2003—San Cristobal Jr. Ballroom
Monitoring and Hazards Research at Active Volcanoes
Posters
Presiding: Charlotte Rowe and Randy White

C1  Hazard Assessment of Volcanoes with Long Repose Periods and Short Historical Records: Examples from the Lesser Antilles. Smith, A. L., Roobol, M. J., Lindsay, J. M., Thompson, S., and Fitzgerald, S.

C2  Correlation of Cyclic Surface Deformation Recorded by GPS Geodesy with Surface Magma Flux at Soufriere Hills Volcano, Montserrat. Mattioli, G. S., and Herd, R.


C5  *Could the Increase in the Volcanic Activity Be Triggered by Increase of the Convergence Rate of the Nazca Plate and the Andean Block?: The Case of Northern Ecuadorian Volcanoes. Alvarado, A., Segovia, M., Molina, I., Garcia, A., and Yepes, H.


C7  *Volcanic Tremor at Tungurahua: A Nonclustered Source. Molina, I., and Seidl, D.
C8  Dissolved Gases of Laguna Caliente: Poas Volcano Crater Lake. Sáenz, W., Fernández, E., Martínez, M., Barboza, V., Moreno, N., Valdés, J., and Malavassi, E.

C9  *Seismic Signals from Poas Volcano. Barboza, V., Fernández, E., Duarte, E., Sáenz, R., and Malavassi, E.

C10 Changes in the Activity of Turrialba Volcano: Seismicity, Geochemistry, and Deformation. Barboza, V., Fernández, E., Duarte, E., Sáenz, W., Martínez, M., Moreno, N., Marino, T., Van der Latt, R., Hernández, E., Malavassi, E., and Valdés, J.


C12 *July 2000 Earthquakes at Apoyo Caldera and Masaya City, Nicaragua. Tenorio, V. and Strauch, W.

C13 Monitoring Volcán de Fuego (Colima Volcano), Mexico. Nunez-Cornu, F. J., Suarez-Plascencia, C., Rutz, M., and Reyes-Davila, G. A.

C14 *Eruption-induced Changes to Volcanic Seismicity at Ruapehu Volcano, New Zealand. Bryan, C. J. and Sherburn, S.

C15 Implementation of an Automatic Seismic Monitoring System at Merapi Volcano, Indonesia: Current State and What We Have Learned. Wassermann, J., Ohrnberger, M., and Scherbaum, F.

C16 Neural Networks Applied to Volcano Monitoring. Gidicepietro, F., Del Pezzo, E., Martini, M., Petrosino, S., Scarpetta, S., and Marinaro, M.

Thursday am, 1 May 2003—San Gerónimo A

Major Earthquakes Revisited

Presiding: Diane Doser and Allison Bent

8:00 High-resolution P-wave 3D Velocity Model for the San Fernando Valley Area and Relocation of Events in the Northridge and San Fernando Aftershock Sequences. Pujol, J. and Shen, P.

8:15 *Historical Earthquake Reanalysis Project: San Francisco Bay Region. Uhrhammer, R. A.


8:45 Major Historical Earthquakes in Canada Revisited. Bent, A. L. and Cassidy, J. F.

9:00 *A Reevaluation of the Allah Bund 1819 Earthquake Using the 2001 Bhuj Earthquake as a Template. Bilham, Roger, Fielding, E., Hough, S. E., Rajendran, C. P., and Rajendran, K.

9:15 *Large Earthquake Source Scaling in Stable Continental Crust: Update from India. Johnston, A. C.

Thursday am, 1 May 2003—San Gerónimo A

Strong Ground Motion

Presiding: Gail Atkinson and José Martinez Cruzado


10:45 On the Conversion of Source-to-site Distance Measures for Extended Earthquake Source Models. Scherbaum, F., Schmedes, J., and Cotton, F.

11:00 Comparing Source Models from 1D and 3D Inversions of the Loma Prieta Strong-motion Data. Liu, Pengcheng and Archuleta, Ralph J.

11:15 Strong Ground Motion Models for Probabilistic Seismic Hazard Analysis in the Central and Eastern United States. McCann, M., Youngs, R., Marrone, J., and Abrahamson, N.

Thursday am, 1 May 2003—San Gerónimo B

Seismological Tools for the Advancement of Tsunami Modeling and Warning

Eric Geist and Aurelio Mercado

8:00 Rapid Monitoring of Shallow Earthquake Sources in the Caribbean Using a Regional Moment-tensor Inversion Procedure. Mendoza, C.


8:30 Possible Methods for Estimating the Potential of Tsunami Earthquakes and Earthquake-induced Landslide Tsunamis. McCann, W. R.

8:45 Volcanogenic Tsunamis in the Caribbean Basin: A Challenge for Traditional Warning Systems. Young, S. R.
9:00 Emergent Tsunami Warning System for Puerto Rico and the Virgin Islands. von Hillebrandt-Andrade, C. G., Huerfano, V. A., and Whitmore, P. M.


9:30 Break

10:00 New Procedures and Criteria for Tsunami Warnings in the Pacific. McCreery, C. S.


11:00 A Comparison of Near-shore Tsunami Sources Offshore of Los Angeles and Orange Counties in Southern California. Borrero, J. C., Legg, M. R., and Synolakis, C. E.


Thursday am, 1 May 2003—San Gerónimo C
Seismic Safety of Dams
Donald Yule, Luis Suarez, and Lloyd Cluff

8:30 Comparison of Tectonic and Reservoir-induced Seismicity: Southern California and Northeast Brazil. Abercrombie, R. E., Tomic, J., and do Nascimento, A. F.

8:45 Seismic Analysis of Gravity Dams: The Effect of Valley Shape on Dam-reservoir Response. Prato, C. A. and Stuardi, J. E.

9:00 Seismic Responses of Arch Dam-reservoir-foundation Interaction System. Fahjan, Y. M., Erdik, M., and Borekci, O. S.


9:30 Break

10:00 Deformation of Guajataca and Patillas Dams, Puerto Rico, due to Seismic Loading. Torres, R. and Engemoen, B.


10:30 Assessment of the Earthquake Hazard for Dams Located in the Precordillera of San Juan and Mendoza in Argentina. Carmona, J. S. and Palau, R. L.


Thursday pm, 1 May 2003—San Gerónimo A
Strong Ground Motion
Presiding: Gail Atkinson and José Martinez Cruzado

1:30 *Updated Ground-motion (Attenuation) Relations for Western and Eastern North America. Campbell, K. W. and Bozorgnia, Y.


2:15 Broadband Source Asperity Model of the 2000 Tottori, Japan Earthquake from Nonlinear Inversion of Near-fault Ground Motion. Pulido, Nelson and Kubo, Tetsuo,

2:30 Inversion of Model Variables for Stochastic Ground-motion Simulation in the Southern Part of the Korean Peninsula. Yun, K. H. and Park, D. H.

2:45 Upper Bounds on Peak Ground Motion Revisited. McGarr, A.

3:00 Break

3:30 A Test of a Strong Ground Motion “Prediction” Method for the 7 September 1999, Mw 5.9 Athens Earthquake.
Hutchings, L., Savij, J., Ioannidou, E., Voulgaris, N., Kalogeras, I., and Stavrakakis, N.  

4:00 Site Response of Strong-motion Stations in the Umbria, Central Italy, Region. Castro, R. R., Pacor, F., Bindi, D., and Franceschina, G.


4:30 Horizontal to Vertical Ground-motion Relations for Four Hard-rock Sites in Eastern Canada. Bent, A. L. and Delahaye, E. J.

4:45 Estimating Mean Surface Design Spectra for Shallow Soil Sites. Payne, S. J. and Costantino, C. J.

Thursday pm, 1 May 2003—San Gerónimo B  
Recent Advances in Caribbean and Latin American Neotectonics, Paleoseismology, and Seismic Hazard  
Presiding: Paul Mann and Eugenio Asencio

1:30 Neotectonics of the North America-Caribbean Plate Boundary Zone: A GIS-based Compilation of Faults, Epicenters, and Focal Mechanisms from Guatemala to the Lesser Antilles. Mann, P., Rogers, R., and Watson, L.


2:00 Quaternary Uplift and Faulting of Southern Hispaniola Suggests Seismic Coupling along Muertos Trough Subduction Zone. Hengesh, J. V.

2:15 Development of a Seismic Network in the Dominican Republic by Instituto Sismologico Universitario: Earthquake Hypocenters and Active Faults. Payero, J. S., Martinez, F., Polanco, E., Ortiz, D., and Maki, T.

2:30 Crustal Structure and Seismicity of Cuba. Moreno Toirán, Bladimir


3:00 Break

3:30 Projected Seismicity near Tobago Based on Past Seismicity near and to the East of Tobago. Latchman, J. L. and Shepherd, J. B.


4:00 Reevaluation of Seismic Hazard in the Northern Panama Canal Region, Republic of Panama. Schweig, E. S., Cowan, H., Gomberg, J. S., and Pratt, T. L.


4:30 Geologic Setting of Intraplate Seismicity in the Northern Mexico Basin. Carrillo, M. M. and Silva Mora, Luis


Thursday pm, 1 May 2003—San Gerónimo C  
Seismic Data Acquisition and Instrumentation  
Presiding: Steve Malone and Christa von Hillebrandt-Andrade

1:45 Lessons for Planning or Modernizing Seismic Networks. Arabasz, W. J.

2:00 A Review of Regional Seismic Network Recording and Data Exchange Systems. Malone, S. D.

2:15 Interdisciplinary Real-time Geophysical Instrumentation of Mount Erebus, Antarctica. Aster, R., Kyle, P., McIntosh, W., Dunbar, N., Esser, R., Ruiz, M., and Richmond, M.


2:45 The POLARIS Network: The First 50 Libra VSAT Broadband Seismographs. Asudeh, I. and Atkinson, G. M.

3:00 Break

3:30 Upgrade of INEEL Seismic Stations and Strong-motion Accelerographs to Digital Field Acquisition and Telemetry.
Holland, A. A., Payne, S. J., Berg, R. G., and Hodges, J. M.


4:00 Remote Seismological and Volcano Monitoring Using Distributed Computing Techniques. Lynch, L. L., Beckles, D., Shepherd, J. B., and Ramsingh, C.


Thursday (all day), 1 May 2003—San Cristobal Jr. Ballroom

Puerto Rico Earthquake Hazard: What Do We Know, and Where Do We Go From Here?

Posters

Presiding: José Martinez-Cruzado and Carol Prentice

D1 High-resolution Bathymetric Map of the Puerto Rico Trench: Implications for Earthquake and Tsunami Hazards. ten Brink, U. S. and Smith, S.


D4 Earthquake Submarine Geology and Estimates of Fault Slip Rates in Puerto Rico and the U.S. Virgin Islands. McCann, W. R.


D6 *Plio-Quaternary Seismotectonic Regimes in Western Puerto Rico. Moya, J. C.


D8 Seismically Instrumented Structures in Puerto Rico by the PRSMP. Martinez-Cruzado, J. A. and Martinez-Pagan, J.

D9 Earthquake Instrumentation of Puerto Rico Bridges. Wendichansky, D. A. and Martinez-Cruzado, J. A.

Thursday (all day), 1 May 2003—San Cristobal Jr. Ballroom

Recent Advances in Caribbean and Latin American Neotectonics, Paleoseismology, and Seismic Hazard

Posters

Presiding: Paul Mann and Eugenio Ascencio

E1 First Tomography of Jamaica, West Indies. Wiggins-Grandison, M. D. and Carriaza-Ojeda, A.


E3 BOLIVAR: An Interdisciplinary Investigation of an Oblique Arc-continent Collision Zone. Wallace, T. C.

E4 Structure and Seismicity at the Southern Barbados Accretionary Prism, from Strike-slip to Subduction. Lebrun, J.-F.


E9 Considerations about the Seismicity in Northwestern Argentina. Torres, M. I. and Benitez, L. M.


E11 Ground Motion Amplification on the Cerro Prieto Volcano, Northern Baja California, Mexico. Vidal, A., Munguia, L., and Gonzalez, M.


Thursday (all day), 1 May 2003—San Cristobal Jr. Ballroom

The M 7.9, 2002 Denali Earthquake and Other Important Earthquakes of the Previous Five Years

Posters
Presiding: Roger Hansen

F1 Preliminary Analysis for Site Effects of the Aftershock Strong-motion Data Set of the 1999 Chi-Chi Earthquake. Zhang, F. and Papageorgiou, A. S.

F2 Tectonic Implications of the 29 November 1999 M 5.6 Xiuyan Earthquake from Double-difference Relocation. Jiao, W., Chan, W. W., Gu, H., and Gu, G.


Thursday (all day), 1 May 2003—San Cristobal Jr. Ballroom

Paleoseismology, Tectonic Geomorphology, and Liquefaction

Posters
Presiding: Heidi Stenner and Daniel Ragona


G2 Slip along the Brawley Fault, Imperial Valley, California during the Past 400 Years. Meltzner, A. J., Rockwell, T. K., and Verduco, D. M.

G3 Late Holocene Slip Rate for the San Bernardino Strand of the San Andreas Fault near Banning, California. Orozco, A. and Yule, D.


G8 Overpressure Development in a Sedimentary Basin and Its Relation to Earthquake-induced Liquefaction Deposits. Wolf, L. W., Lee, M.-K., Tuttle, M. P., and Browning, S.

Thursday (all day), 1 May 2003—San Cristobal Jr. Ballroom

Major Earthquakes Revisited

Posters
Presiding: Diane Doser and Allison Bent

H1 Crustal Structure of the Northern Margin of the Tien Shan, China and Its Tectonic Implications for the 1906 M 7.7 Manas Earthquake. Wang, C.-Y., Yang, Z.-E., Luo, H., and Mooney, W. D.

H2 Induced Stress Effects of the 1988 Saguenay Earthquake in Eastern Canada. Oncel, A. O. and Adams, J.


Thursday (all day), 1 May 2003—San Cristobal Jr. Ballroom

Seismological Tools for the Advancement of Tsunami Modeling and Warning

Posters
Presiding: Eric Geist and Aurelio Mercado

J1 Local Microseismicity Analysis in Support of Tsunami Flood Mapping in Puerto Rico. Huerfano, V. A. and Mercado, Aurelio,
The Nicaraguan Tsunami Warning System. **Strauch, W.**

Rapid Determination of Mw from Broadband P Waveforms. **Hirshorn, B. F.,** Whitmore, P. M., and Tsuboi, S.


**Friday am, 2 May 2003—San Gerónimo B**

Closing Plenary Session

8:45 A Millennium of Earthquake Fatalities: A Grim Future. **Bilham, Roger**

**Friday am, 2 May 2003—San Gerónimo A**

Magnitude and Recurrence in Central and Eastern North America

Presiding: Buddy Schweig and Won-Young Kim


11:00 Where Was the 23 January 1812 New Madrid Mainshock? **Hough, S. E.,** Mueller, K., and Bilham, Roger,

11:15 *Revisiting the New Madrid 1811–1812 Fault Rupture Scenario with the New SCR Seismic Source Scaling.** **Johnston, A. C.**


11:45 Developing a Local Magnitude Scale for the Central U.S. **Miao, Q.** and Langston, C. A.

**Friday am, 2 May 2003—San Gerónimo B**

The M 7.9, 2002 Denali Earthquake and Other Important Earthquakes of the Previous Five Years

Presiding: Joan Gomberg and Christine Powell

10:30 Source Variables and Scaling Relations for the 1999 North Anatolian Fault Zone, Turkey Earthquakes. Gok, M. G., **Hutchings, L. J.,** and Mayeda, K. M.

10:45 Analysis of Site Response in the Athens Area from the 7 September 1999, Mw 5.9 Athens Earthquake and Aftershock Recordings, and Intensity Observations. Ioannidou, E., Voulgaris, N., Kalogeras, I., Stavrakakis, G., and **Hutchings, L. J.**

11:00 Effect on Seismicity and Earthquake Triggering of the 1999 Mw 7.6 Chi-Chi, Taiwan Earthquake. **Ma, K.-F.,** Chang, C.-H., and Stein, R. S.


11:30 High-resolution Exploration of the Kunlun Fault, China: Implications from the Mw 7.8 Kunlun Earthquake. **Wang, C.-Y.,** Ding, Z.-F., and Chan, W. W.


**Friday am, 2 May 2003—San Gerónimo C**

Understanding and Communicating Seismic Risk: Applications of Science to Society

Presiding: Don Windeler and Chesley Williams

11:00 Communicating Seismic Risk: A Multidisciplinary Approach. **Rodriguez, H.,** Diaz, W., and Aguirre, B.


11:30 Communicating Foreshock and Aftershock Hazard through Time-dependent Hazard Maps. Gerstenberger, M. C., **Wiemer, S.,** and Jones, L. M.

11:45 A Way to Detect Times of Increasing Probability (TIPS) Preceding Large Earthquakes in Southern California. **Howell, B. F. Jr.**

**Friday pm, 30 April 2003—San Gerónimo A**

Magnitude and Recurrence in Central and Eastern North America

Presiding: Buddy Schweig and Won-Young Kim

1:30 Ground Motion from a Composite Source Model in the Central United States. **Shi, B.,** Wang, Z., Woolery, E. W., and
Zeng, Y.
1:45  Observed Strain Zonation Clarifies Recurrence Rates from Paleoseismological Data near Charleston, South Carolina. **Taiwani, P.**, Trenkamp, R., and Dura-Gomez, I.

Talwani, P., Trenkamp, R., and Dura-Gomez, I.
2:00  Implications of the Paleoseismicity Model for Earthquake Recurrence Rates in the Central and Eastern United States. **Ebel, John E.**

Ebel, John E.

Cramer, C. H.
2:30  Application of Wavelet-domain Waveform Inversion to Source Parameter Retrieval: Example from the 2002 Au Sable Forks, New York Earthquake. **Sze, E. K. M.** and Toksöz, M. N.

Sze, E. K. M.
2:45  Spatial Variability of Magnitude-range Dependence of b Value in France. **Beauval, C.** and Scotti, O.

Friday pm, 2 May 2003—San Gerónimo B
The M 7.9, 2002 Denali Earthquake and Other Important Earthquakes of the Previous Five Years
Presiding: Joan Gomberg and Christine Powell


Anderson, J. G.
1:45  Trans-Alaska Oil Pipeline Design Accommodates 3 November 2002, M 7.9 Earthquake and Surface Fault Rupture. **Cluff, L. S.** and Slemmons, D. B.

Cluff, L. S.
2:00  Local Amplification of Seismic Waves from the Mw 7.9 Alaska Earthquake and a Damaging Seiche in Lake Union, Seattle, Washington. **Barberopoulos, A.**, Qamar, A., Creager, K., Steele, W., and Pratt, T. L.

Barberopoulos, A.
2:15  Was Earthquake Triggering by the Landers Earthquake Extraordinary? Answers from the Denali Earthquake. **Gomberg, J. S.** and Bodin, P.

Gomberg, J. S.

Nunez-Cornu, F. J.

Anderson, J. G.

Friday pm, 2 May 2003—San Gerónimo C
Understanding and Communicating Seismic Risk: Applications of Science to Society
Presiding: Don Windeler and Chesley Williams


van der Vink, G. E.

Williams, C. R.
2:00  The Challenge of Parametric Earthquake Covers in Reinsurance. **Andrea, G.**

Andrea, G.

Windeler, D. S.

Friday (all day), 2 May 2003—San Cristobal Jr. Ballroom
Earthquake Generation, Fault Behavior, Source Parameters, and Wave Propagation

Presiding: Craig Nicholson

K1  Seismic Imaging of Structure and Rupture Behavior along the Bear Valley Section of the San Andreas Fault. **McGuire, J.** and **Ben-Zion, Y.**

K2  Stress Triggering and Earthquake Probability: An Example from Southern California. **Hardebeck, J. L.**


K4  On Seismic Sources Characterized by Volume Changes. **Richards, P. G.** and Kim, Won-Young,


K6  Shallow Seismic Trapping Structure in the San Jacinto Fault Zone near Anza, California. **Lewis, M. A.**, Peng, Z.,
Ben-Zion, Y., and Vernon, F.


K8 3D Development of an Active Oblique Fault System, Northern Santa Barbara Channel, California. Kamerling, M. J., Sorlien, C. C., and Nicholson, C.


Friday (all day), 2 May 2003—San Cristobal Jr. Ballroom
Seismic Data Acquisition and Instrumentation
Posters
Presiding: Christa von Hildebrandt-Andrade and Steve Malone


L3 A Comparison of Two Strong-motion Accelerometers. Passmore, P. R., Raczka, J. F., and Gannon, J.

L4 Recent 24-bit A/D Tests on PASSCAL Recorder Model 130-01/6. Passmore, P. R., Elliott, B. A., and Kromer, R.

L5 New General-purpose Data Communications and Authenticator Modules from Guralp Systems. Pauly, B., Pearce, N., and McKenzie, J.

L6 Integration Developments and the Complete Product Line of Guralp Seismic Instrumentation. Pauly, B. and Pearce, N.


L8 Commercial Open-source Software in Instrumental Seismology. Dricker, I., Friberg, P., and Hellman, S.


L10 Creating a Regional Earthquake Information System: Practical Experience from the Utah Regional Seismic Network. Nava, S., Arabasz, W. J., Pankow, K., Moeinvaziri, A., Drobeck, D., and Dye, T.

L11 The Southern California Earthquake Center Intern Program. Perry, S. C.


L13 Setting Up a Seismic Monitoring Station Network around the Krsko Nuclear Power Plant. Vidrih, R., Godec, M., Gosar, A., Sincic, P., Tasic, I., and Zivic, M.

L14 Modernization of the Slovenian National Seismic Network. Vidrih, R., Godec, M., Gosar, A., Sincic, P., Tasic, I., and Zivic, M.

L15 Multipurpose Seismic Monitoring System (MSMS). Marcillo, O. E.


L18 WLH 1.0 (WabeLab at Home): A New Tool for Seismic Wave Analysis on Personal Computers. Bono, A. (presented by Delladio, A.)
Posters
Presiding: Buddy Schweig ad Won-Young Kim

M1 Evidence for a Large Earthquake near Newburyport, Massachusetts about 2,000 Years Ago. Tuttle, M. P., Witkowski, A., Daniszewska, G., Ebel, John E., and Myskowski, E.


M3 Quaternary Faulting in Memphis, Tennessee, USA. Van Arsdale, R. B., Velasco, M. S., Waldron, B. A., and Cox, R. T.

M4 Earthquake Source Properties from High School Seismometers. Jaume, Steven C.

M5 Siting, Installation, and Preliminary Data from Charleston, South Carolina ANSS Stations. Stephens, Jason H. and Jaume, Steven C.