



CEUS Earthquake Sources Workshop

February 22-23, 2012

Fogelman Center, University of Memphis

Introduction & Overview

1. Welcome (Langston)
2. Overview of 2008 USGS hazard model (Petersen)
3. New issues since 2008

New Madrid source

1. Magnitudes
 - a. Intensities (Hough, Cramer)
 - b. Magnitude-area relations (Langston)
 - c. Liquefaction effects (Holzer)
 - d. Ground-motion modeling (Williams)
 - e. Models & sensitivity (Moschetti)
2. Rates
 - a. Paleoseismology (Van Arsdale)
 - b. Geodesy (Stein, Frankel, Boyd)
 - c. Models & sensitivity (Petersen)
3. Locations
 - a. New information (Pratt, Magnani, Van Arsdale)
4. Discussion & recommendations

Historical (“background”) seismicity

1. Recent noteworthy earthquakes (Chapman, Rubinstein, Horton)
2. Catalog & catalog statistics
 - a. CEUS-SSC catalog – description & implications of possible switch to Mw (Mueller)
 - b. Declustering (Boyd) & man-made earthquakes (Mueller)
 - c. Completeness & *b* value (Mueller)
3. Rates (“agrid”)
 - a. Methodology: multiple models & adjustments (Mueller)
 - b. Magnitude uncertainty: observation/perspective (Ebel), implementation (Mueller)
 - c. Spatial smoothing (Moschetti)
4. Mmax (Petersen, Johnston)
5. Discussion & recommendations

Perspective

1. Canada (Adams)
2. Intraplate eqks & source zones (Talwani)
3. South Carolina historical earthquakes (Stevenson)

Other sources

1. Eastern Tennessee (Hatcher)
2. Southern Mississippi Embayment (Cox)
3. Cheraw & Meers (Haller)
4. Charleston (Haller)
5. Wabash (Haller)
6. Marianna (Haller)

Engineering & public policy

1. USNRC perspective (Salomone)
2. Codes, engineering projects, insurance (Petersen, Pezeshk, Wang)

Attendees

John Adams, NRCAN
John Ake, NRC
Bob Bauer, Illinois Geological Survey
Oliver Boyd, USGS
Kenneth Campbell, EQECAT
Martin Chapman, Virginia Tech
Randy Cox, University of Memphis
Chris Cramer, University of Memphis
Donny Dangkua, University of Memphis
Cliff DeBerry, WTSSC
Heather DeShon, University of Memphis
John Ebel, Weston Observatory
James Eason, University of Memphis
Art Frankel, USGS
Ryan Gold, USGS
Christine Goluet, PEER
Stephen Halchuk, Geological Survey of Canada
Kathy Haller, USGS
Michael Hamburger, Indiana University
Kathryn Hanson, AMEC
Ross Hartleb, Fugro William Lettis and Associates
Robert Hatcher, UT Knoxville
Austin Holland, Oklahoma Geological Survey
Thomas Holzer, USGS
Stephen Horton, University of Memphis
Mehrdad Hosseini, University of Memphis
Sue Hough, USGS
R. W. Howe, RWH, PE
Arch Johnston, University of Memphis
David Johnston, Arkansas Geological Survey
Jeffrey Kimball, Defense Nuclear Facilities Safety Board
J Kutliroff, University of Memphis
Chuck Langston, University of Memphis
Mark Leonard, Geoscience Australia
Yong Li, NRC
Beatrice Magnani, University of Memphis
Mojtaba Malek, University of Memphis
Natasha McCallister, USGS
Andres Medez, AON
Troy Milburn, Corps of Engineers
Kent Moran, University of Memphis
Morgan Moschetti, USGS
Charles Mueller, USGS
Gary Patterson, University of Memphis
Mark Petersen, USGS
Shahram Pezeshk, University of Memphis
Peter Powers, USGS
Thomas Pratt, USGS
Richard Quittmeyer, Paul Rizzo Associates, Inc.
Justin Rubinstein, USGS
Lawrence Salomone, Savannah River Site
Aureta Shahjovei, University of Memphis
Nilesh Shome, RMS
Bob Smalley, University of Memphis
Seth Stein, Northwestern University
Don Stevenson, Savannah River Site
Pradeep Talwani, University of South Carolina
Roy Van Arsdale, University of Memphis
Qi Wang, AIR Worldwide
Zhenming Wang, Kentucky Geological Survey
Jim Wilkinson, CUSEC
Rob Williams, USGS
Mitch Withers, University of Memphis
Du Yi, KUS
Brian Young, University of Memphis