

Mehrdad Hosseini, Ph.D. Candidate

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Expertise	<ul style="list-style-type: none">• Site response analysis and probabilistic seismic hazard analysis• Synthetic ground motion generation, ground motion selection and scaling• Data acquisition/analysis for reflection, refraction, MASW, ReMi, downhole seismic survey methods• Structural/seismic design, and relevant analysis software packages• Cast in place and precast concrete and also steel design/construction• Surface wave multi-mode inversion and its geotechnical/geophysical applications• Joint surface wave inversion of phase velocity dispersion curve and time-domain seismogram• Several programming languages and operating systems, 19 years of experience• High performance computing (HPC) environment• Dedicated, energetic and willing to work hard, with high level of team working abilities
Education	<ul style="list-style-type: none">• Ph.D. in Structural Engineering, The University of Memphis, May 2013 expected• Master of Science in Structural Engineering, International University of Imam Khomeini, Iran, 2005• Bachelor of Science in Civil Engineering, University of Guilan, Iran, 2003
Awards	<ul style="list-style-type: none">• SEG/ExxonMobil Student Education Program (SEP) Grant Recipient, 2011• SSA (Seismological Society of America) Student Travel Grant Recipient, 2011• Engineering College Fellowship Recipient, The University of Memphis, 2010-2011• First Rank Student in M.Sc. Program, International University of Imam Khomeini, 2003-2005
GPA	<ul style="list-style-type: none">• Ph.D. 3.71, The University of Memphis
Active Research	<ul style="list-style-type: none">• Estimation of geometric spreading and anelastic attenuation for the NGA-East• Seismic site specific studies and probabilistic seismic hazard analysis at many sites in central United States• Development/application of a new device and analysis method for an improved downhole seismic survey method• Multi-modal inversion of phase velocity dispersion curve for determination of shear wave velocity• Inversion of time-domain synthetic along with multi-modal inversion of dispersion curve for determination of shear wave velocity
Field Experience	<ul style="list-style-type: none">• Down-hole test with two geophones and pneumatic source for shear wave generation• MASW method using accelerometers with non-uniform spacing• MASW method using geophones with uniform spacing• Refraction Micrometer (ReMi) test with 24 geophones• Reflection and Refraction
Professional Experience	<ul style="list-style-type: none">• May 2008 - July 2009 Abadsazan Construction Company <i>Position</i> Construction contractor <i>Description</i> In charge of construction of nine-story residential concrete framed building• May 2006 - Feb. 2008 Deesman Precast Production Company <i>Position</i> Field Engineer/Design Team Engineer <i>Description</i> Precast concrete structure, three-story parking structure (20,000 square meters)• May 2004 - May 2006 Shahr-&-Bonian Consulting Company <i>Position</i> Construction supervisor <i>Description</i> Project #1; monolithic concrete structure, six-story structure (40,000 square meters) Project #2; Steel structure, nine-story structure (32,000 square meters)
Publications/ Presentations	<ul style="list-style-type: none">• Hosseini, M., Pezeshk, S., <i>Reliability and Efficiency in Shear-Wave Velocity Inversion Methods and Practical Considerations for Multi-Mode Surface Wave Inversion Technique</i>, Annual meeting of the American Geophysical Union, 5-9 December 2011, San Francisco, California. (Oral Presentation)• Hosseini, M., Pezeshk, S., <i>Multi-mode Inversion of Phase Velocity Dispersion Curves Obtained by the MASW Method Using Both a Uniform and a Non-uniform Receiver Spacing</i>, Eastern section annual meeting of the Seismological Society of America, 16-18 October 2011, Little Rock, Tennessee. (Oral Presentation)

- Hosseini, M., Pezeshk, S., *Comparison of Phase Velocities and Shear-Wave Velocity Inversion Results of MASW Method Obtained by Uniform Receiver Spacing Analyzed by SurfSeis Package Software with non-uniform Receiver Spacing Analyzed by the Genetic Algorithm Inversion Scheme*, Annual meeting of the Geological Society of America, 9-12 October 2011, Minneapolis, Minnesota. (Oral Presentation)
- Hosseini, M., Pezeshk, S., *Identification and Inversion of Rayleigh Wave Dispersion Using a Multi-mode Approach*, Annual Meeting of the Seismological Society of America, April 13-15, 2011, Memphis, Tennessee. (Oral Presentation)
- Stovall, S., Hosseini, M., Pezeshk, S., *Multi-Mode Inversion of Rayleigh Wave Dispersion Data Using a Non-Uniform Spacing and a Moving Source Approach*, Annual Meeting of the Earthquake Engineering Research Institute (EERI), 9-12 February, 2011, San Diego, California. (Poster Presentation)
- Hosseini, M., Akbarpoor, A., Zahrai, S.M., Hosseini, S.M., Dibaji, S.A., *Introduction of Friction Transfer: an in situ test method for estimation of concrete strength and bond strength between two different layers of cementitious material*, 14th World Conference on Earthquake Engineering, September 2008, China. (Poster Presentation)
- Hosseini, M., Zahrai, S.M., Hosseini, S.M., Akbarpoor, A., *Seismic evaluation of precast concrete bridges with Hybrid connections*, FHWA Accelerated Bridge Construction Conference – Highway for Life, University of Nebraska, March 2008, USA. (Oral Presentation)
- Zahrai, S.M., Hosseini, M., Hosseini, S.M., Akbarpoor, A., *Comparison between Precast and In Situ Construction of Bridges*, FHWA Accelerated Bridge Construction Conference, Highway for Life, University of Nebraska, March 2008, USA. (Oral Presentation)
- Zahrai, S.M., Hosseini, M., Hosseini, S.M., Akbarpoor, A., *Seismic Evaluation of Precast Moment Resisting Frames with Hybrid Connections in Iran Major Earthquakes*, 5th International Conference on Seismology and Earthquake Engineering, 2007, Iran. (Poster Presentation)

Patents

- Hosseini, M., Hosseini, S.M., *A moment resisting connection in precast structures*, Registration No. 51143, Iran Patent and Trademark Office, 2008.
- Hosseini, M., Hosseini, S.M., *Internal Pressure device for in situ assessment of concrete strength*, Registration No. 51566, Iran Patent and Trademark Office, 2008.

Skills

- Proficient in advanced programming with Visual Basic 6, MATLAB, Shell Scripts, C, Macro VB programming in Microsoft Office package (mostly in Excel) and MathCAD
- Familiar with Fortran in the practicing/learning process
- Proficient with SMSIM, SHAKE91, Generic Mapping Tool (GMT), Seismic Analysis Code (SAC), Generic Seismic Application Computing (GSAC), Computer Program in Seismology (CPS), KGS SurfSeis, Advanced AutoCAD (2D-3D), Lusas Finite Element Analysis, CSI2000 package (SAP, ETABS, SAFE), Halliburton ProMAX, Leap Software, Concise Beam, Microsoft Office package
- More than 19 years of experience in programming; capable of programming complicated algorithms quickly
- Hard working with team work ability
- Very good communication skills; oral, written and presentation

Relevant Courses/ Workshops

- SEG/ExxonMobil student education program (SEP) workshop
- SurfSeis® workshop for analysis of surface waves, Kansas geological survey (KGS), Lawrence, KS
- Geotechnical earthquake engineering
- Probabilistic and earthquake hazard analysis
- Seismic resistant/concrete/pre-stressed concrete/steel design
- Signal processing
- Data analysis in seismology/geophysics
- Inverse methods in geophysics
- Exploration seismology (workshop with Halliburton ProMAX)
- Interpretation seismology

References

- **Dr. Shahram Pezeshk**, Chair and Emison Professor of Civil Engineering, The University of Memphis, Memphis, TN 38152, Phone: (901) 678-4727, spezeshk@memphis.edu
- **Dr. Jose Pujol**, Professor in Department of Earth Science, The University of Memphis, Memphis, TN 38152, Phone: (901) 678-4827, jpujol@memphis.edu
- **Dr. Heather DeShon**, Assistant Professor in Department of Earth Science, The University of Memphis, Memphis, TN 38152, Phone: (901) 678-1527, hdeshon@memphis.edu