

Arash Khosravifar
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EDUCATION

Doctor of Philosophy in Civil Engineering

University of California, Davis (2006 – current)

Major: Geotechnical Engineering

Minor: Structural Engineering

Dissertation title: “Analysis and Design for Inelastic Structural Response of Bridge Pile Foundations in Laterally Spreading Ground during Earthquakes”

Thesis advisor: Professor Ross W. Boulanger

Master of Science in Civil Engineering

Sharif University of Technology, Tehran, Iran (2003 – 2006)

Major: Structural and Earthquake Engineering

Dissertation title: “Seismic Vulnerability Study and Structural Classification of Rural Houses in Iran”

Thesis advisors: Professor Ali Bakhshi, and Professor Mohammad A. Ghannad

Bachelor of Science in Civil Engineering

Sharif University of Technology, Tehran, Iran (1998 – 2003)

EDUCATIONAL HONORS

Recipient, First Runner-up Award in Deep Foundation Institute (DFI) Educational Trust 2010 Student Paper Competition, Hollywood, CA (2010)

Recipient, Best Poster Presentation Award, Geotechnical Graduate Student Society (GGSS) at UC Davis, Round Table 2010, Davis, CA (2010)

Recipient, Graduate Studies Travel Award, UC Davis (2010)

Ranked 20th among over 12,000 participants in a nation-wide university entrance exam for M.Sc. degree in Civil Engineering, Iran (2003)

Ranked 8th among over 300,000 participants in a nation-wide university entrance exam for undergraduate studies, Iran (1998)

RESEARCH EXPERIENCE

Doctor of Philosophy, University of California, Davis (2006-current)

Analysis and design for inelastic structural response of bridge pile foundations in laterally spreading ground during earthquakes. The highlights of this PEER funded project are:

1. Computational modeling of a soil-structure interaction problem in OpenSees FE platform including advanced plasticity soil materials to model liquefaction, distributed plasticity elements to properly model nonlinearity in reinforced concrete piles, and nonlinear soil springs to transfer load between soil and pile elements.
2. Developing a new design guideline to design bridge pile foundations subjected to the combination of inertial load and lateral spreading load, induced by liquefaction, during earthquakes.
3. A comparison of responses between 3D and 2D modeling of soil-pile interaction during liquefaction to assess if the conclusions in the first step hold valid.

Master of Science, Sharif University of Technology, Tehran, Iran (2003-2006)

Assessing economical retrofitting methods for masonry/adobe houses; supported by 3ei (Earthquake Engineering and Education Institute www.3ei.org). This study initiated after the Bam Earthquake (2005) with the mission of studying the means to decrease the casualties caused by the collapse of adobe buildings in rural areas during earthquakes. This study included:

1. An extensive field study to investigate the structural specifications of the adobe rural houses.
2. Primary numerical dynamic FE analyses using SAP2000.
3. Literature review on proposed innovative methods on retrofit of adobe houses.

TEACHING AND OUTREACH EXPERIENCE

Teaching Assistant at UC Davis

ECI-171L (Soil Mechanics Laboratory), Fall 2008, Fall 2009, and Fall 2010
ENG-104L (Mechanics of Materials Laboratory), Winter 2009, and Spring 2009
ECI-10 (Introductory to Surveying), Spring 2008

ECI-213 (Structural Dynamics – graduate level), Fall 2010 – developing and instruction of 3 lab sessions for Professor Kenneth Loh using a portable shake table to demonstrate various principles of structural dynamics in a hands-on experience.

ECI-238 (Seismic Engineering – graduate level), Winter 2011 – developing one lab session for Professor Sashi Kunnath using the portable shake table to demonstrate and experiment seismic response of different structures to different ground motions.

Tutoring during Undergraduate Study

High school Physics and Mathematics tutor (1998-2002)

Outreach Activities

EERI Undergraduate Seismic Design Competition – organizing and holding the competition using UC Davis's portable shake table during EERI Annual Meeting, San Francisco (February 2010), and Salt Lake City (February 2009)

Shake table demo at different occasions, such as 8th grade students from Berry Elementary School Yuba City (March 2010), elementary school students in summer camp (August 2010), and UCD freshmen seminar for Professor Amit Kanvinde (November 2010)

PROFESSIONAL SERVICE

EERI Student Leadership Council (SLC)

Co-president (2010 – 2011), seismic competition co-chair (2010 – 2009), and member (2008 – 2009)
SLC consists of 20 graduate students from different universities in the US and Canada who are mainly in charge of organizing and holding the EERI Undergraduate Seismic Design Competition every year during the EERI Annual Meeting with more than 200 undergraduate students participating and an annual budget of about \$50K (<http://slc.eeri.org>).

Graduate Geotechnical Student Society (GGSS) at UC Davis

Treasurer (2008 – 2009) and web-master (2009-2010)
GGSS is a student society that initiated in 2007 at UC Davis. It has created a strong bond among the geotechnical students and the faculties through holding weekly seminars, field trips, social events, and an annual one-day open house geotechnical seminar called Roundtable with a budget of \$12K annually (<http://ggss.ucdavis.edu>).

Deep Foundation Institute (DFI) committee on Seismic and Lateral Loads

Member (2010 – present)

INDUSTRIAL EXPERIENCE

Sazian Consulting Engineers Co., Tehran, Iran

Staff Engineer, Bridge Engineering Division (March 2004 – September 2004) - analysis and design of reinforced concrete bridge columns, and retaining walls.

PROFESSIONAL TRAININGS AND WORKSHOPS

NEES Workshop on Geotechnical Centrifuge Modeling, Rensselaer Polytechnic Institute, Troy, NY (September 2008)

OpenSees Workshop on Parallel-Processing, Pacific Earthquake Engineering Research (PEER) Center, Richmond Field Station, CA (May 2009)

PROFESSIONAL AFFILIATIONS

American Society of Civil Engineers (ASCE), Student Member
Earthquake Engineering Research Institute (EERI), Student Member
Geotechnical Graduate Student Society (GGSS)
Geotechnical Extreme Event Reconnaissance (GEER), Regular Member

PUBLICATIONS

Refereed Journals

1. Khosravifar, A., Boulanger, R. W. “Inelastic Response of Extended Pile Shafts in Laterally Spreading Ground during Earthquakes.” Deep Foundation Institute Journal (Spring 2011).
2. Khosravifar, A., Boulanger, R. W. “Effects of Liquefaction Induced Lateral Spreading on Inelastic Demands of Bridge Pile Foundations during Earthquakes.” To be submitted to Earthquake Spectra, Earthquake Engineering Research Institute.
3. Khosravifar, A., Boulanger, R. W. “Design of Bridge Pile Foundations for the Combination of Inertial and Liquefaction Induced Lateral Spreading Loads during Earthquakes.” To be submitted to Earthquake Spectra, Earthquake Engineering Research Institute.
4. Khosravifar, A., Boulanger, R. W. “Comparison of 3D and 2D Analyses of Inelastic Response of Extended Pile Shafts in Laterally Spreading Ground during Earthquakes.” To be submitted to Earthquake Spectra, Earthquake Engineering Research Institute.

Refereed Conferences

1. Ghannad, M.A., Bakhshi, A., Mousavi Eshkiki, S.E., Khosravifar, A., Bozorgnia, Y. and Taheri Behbahani, A.A., “A Study on Seismic Vulnerability of Rural Houses in Iran”, First European Conference on Earthquake Engineering and Seismology, Geneva, Switzerland (September 2006)
2. Mousavi Eshkiki, S. E., Khosravifar, A., Ghannad, M. A., Bakhshi, A., Taheri, A., and Bozorgnia, Y., “Structural Typology of Traditional Houses in Iran Based on Their Seismic Behavior”, 8th US National Conference on Earthquake Engineering, San Francisco, CA (2006)
3. Bakhshi, A., Bozorgnia, Y., Ghannad, M. A., Khosravifar, A., Mousavi Eshkiki, S., E., Rahimzadeh Rofooei, F., and Taheri, A., “Seismic Vulnerability of Traditional Houses in Iran”, SeismoAdobe2005 Conference, Peru, Catholic University of Peru (2005)
4. Bakhshi, A., Bozorgnia, Y., Ghannad, M. A., Khosravifar, A., Mousavi Eshkiki, S. E., Rahimzadeh Rofooei, F., and Taheri, A., “Seismic Vulnerability of Traditional Houses in Iran”, Bam Earthquake Conference, Housing Foundation of Iran, Bam, Iran (2005)
5. Khosravifar, A., and Khosravifar, S., “Evaluation of Tuned Mass Dampers Performance in Reducing the Seismic Response of Elastic Structure”, 4th Technical and Engineering Student Convention, Young Research Club, Kashan University, Iran (2005)

PRESENTATIONS AND POSTERS

Oral Presentations

1. “Inelastic Behavior of Large Diameter Pile Shafts subjected to Lateral Spreading and Inertial Loads”, guest speaker at San Francisco Geo-Institute, Oakland, CA (February 2011)
2. “A Guideline for Design of Bridge Pile Foundations in Laterally Spreading Grounds”, guest speaker at Geotechnical Graduate Student Society Seminar, Davis, CA (February 2011)
3. “Analysis and Design of Extended Pile Shafts at Laterally Spreading Ground during Earthquakes”, guest speaker at Oregon State University, Corvallis (November 2010)

4. “Combination of Inertial and Lateral Spreading Loads on Inelastic Response of Extended Pile Shafts”, guest speaker at Rutherford and Chekene, San Francisco, CA (June 2010)
5. “Inelastic Response of Pile Shafts in Laterally Spreading Ground during Earthquakes”, UC Davis Round Table 2010, Annual Geotechnical Open House, University of California, Davis (April 2010)

Poster Presentations

1. “Inelastic Response of Extended Pile Shafts in Laterally Spreading Ground during Earthquakes”, Deep Foundation Institute (DFI) 35th annual conference, Hollywood, CA (October 2010) – recipient of the first runner-up award in the DFI Educational Trust 2010 Student Paper Competition
2. “Inelastic Response of Extended Pile Shafts in Laterally Spreading Ground during Earthquakes”, PEER Annual Meetings, San Francisco (October 2009 and 2010)
3. “Inelastic Response of Extended Pile Shafts in Laterally Spreading Ground during Earthquakes”, UC Davis Round Table, Annual Geotechnical Open House, University of California, Davis (April 2008, 2009, and 2010)