

FRIEDMAN FAMILY VISITING PROFESIONALS PROGRAM



Visit to University of Texas at Austin: February 15, 2017

This report summarizes the visit of **Dr. Jorge F. Meneses** from RMA Group, Inc that took place at The University of Texas at Austin on February 15, 2017.

ITINERARY OR AGENDA

TIME:	ACTIVITY:
10:30 AM – 10:50 AM	Meeting with PhD Candidate David Teague (Geotechnical Engineering)
11:00 AM – 11:45 AM	Meeting with Dr. Ellen Rathje (Geotechnical Engineering)
12:00 PM – 1:00 PM	Lunch with EERI student chapter officers
1:00 PM – 1:45 PM	Meeting with Dr. Juan Murcia-Delso (Structures)
2:00 PM – 3:00 PM	Guest lecture by Visiting Professional
3:00 PM – 3:45 PM	Meeting with Dr. Patricia Clayton (Structures)

STUDENT CHAPTER VISIT PLANNING COMMITTEE

LEAD ORGANIZER(S): Stalin Armijos, President, starmijos@utexas.edu

- Xiaoyue Wang, Executive Board Member, xy_wang@utexas.edu

Prof. Ellen Rathje and Prof. Ellen Rathje assisted in planning

VISITING PROFESSIONAL LECTURE OVERVIEW

Dr. Jorge Meneses' presentation was entitled "Earthquake Ground Motions for a Near-Source Complex Structure". A brief description of the latest NGA West 2 motion models including near-fault considerations (directionality and directivity) used in the definition of the levels of earthquake hazard was shown. The case study of a complex roof structure at a near-source site in Los Angeles, California, was addressed and the criteria for selecting time histories according to the ASCE7-16 and 2015 NEHRP was presented.

The presentation was attended by students and faculty in Geotechnical and Structural Engineering programs at The University of Texas at Austin (UT), many of whom are member of the EERI Student Chapter. The audience response was generally positive. The topic was of great interest for both, geotechnical and structures students.

Lecture Abstract

Major structures increasingly require site-specific or project-specific seismic design criteria based on performance-based design. Levels of performance typically include performance associated with the Risk-targeted Maximum Considered Earthquake (MCE), Design Earthquake and Service level. Definition of these levels of earthquake hazard depend on the ground motion models used. Also for the MCE level, nonlinear seismic time-history analyses are required. The geotechnical engineer typically estimates the seismic demand for the different levels of performance and develop suitable suites of time histories for the seismic analyses of the proposed structures.

This presentation will describe the levels of performance, discuss the latest NGA West 2 ground motion models including near-fault considerations (directionality and directivity), and criteria for selecting time histories per the latest guidelines from ASCE 7-16 and 2015 NEHRP for a complex roof structure at a near-source site in Los Angeles area, California.

Professional Bio

Jorge Meneses is Principal Geotechnical Engineer with RMA Group, Inc. and an expert in geotechnical, foundation and earthquake engineering. Areas of expertise include probabilistic and deterministic seismic hazard analysis, seismic deaggregation, selection and modification of earthquake ground motions, site response and characterization, liquefaction and lateral spread evaluation and mitigation, seismic stability of earthworks, post-earthquake reconnaissance, numerical modeling and advanced geotechnical testing. Dr. Meneses specializes in seismic soil-structure interaction analysis, and analysis and design of pile foundations subjected to liquefaction and lateral spread. He has experience with seismic hazard evaluation and ground motions development in different earthquake environments, and is very knowledgeable with seismic regulations for dams, buildings, bridges, nuclear facilities, ports and others. Dr. Meneses was the leader of one of the GEER (Geotechnical Extreme Events Reconnaissance) missions to evaluate damage and seismic performance after the M9.0 Great East Japan Earthquake in April 2011.

Dr. Meneses has professional experience in US, Japan, Peru, India, and Mexico. He has been involved in numerous projects serving as a technical lead in earthquake geotechnical engineering and foundation engineering across the country. Dr. Meneses frequently acts as a peer reviewer for technical conferences and technical journal publications, is a guest speaker for domestic and international conferences, and has published more than 60 technical publications. He is currently a part-time instructor in the graduate school of San Diego State University, and University of California San Diego Extension. He is also the President and Founder of the Earthquake Engineering Research Institute (EERI) San Diego Chapter, Member of the ASCE 7-16 (Minimum Design Loads for Buildings and Other Structures) and ASCE 1 (Geotechnical Analysis, Design, Construction, Inspection and Monitoring of Nuclear Safety-Related Structures) Committees, Honorary Chair of the ASCE Geo-Institute San Diego Chapter, member of the Academy of Geo-Professionals, and a Fellow of the American Society of Civil Engineers (ASCE).

SUPPLEMENTAL ACTIVITIES

Lunch with student chapter

Dr. Jorge Meneses and students from our student chapter had lunch together at a local restaurant. Many topics were discussed, which included: ongoing research topics about earthquake engineering at UT Austin, career opportunities for international students in the earthquake engineering after finishing graduate school, anecdotes of being a part-time professor.

Meetings with faculty at the University of Texas at Austin

Dr. Jorge Meneses met with different faculty members to discuss about research topics in Earthquake Engineering.

RESULTS, FEEDBACK AND LESSONS LEARNED

Dr. Jorge Meneses visit to UT Austin provided a good idea about ground motion models that include near-fault considerations, and what are the considerations to select time histories to be used in the analysis of near-source structures. Although the lecture was clearer for geotechnical students, fundamental and important concepts were clearly transmitted to the audience so that students with different background were able to process the information provided. For future visiting professional, we would like to listen about:

- Performance based design in structural engineering
- Case studies where cutting-edge technology has been applied in earthquake engineering
- Seismic risk analysis

ACKNOWLEDGEMENTS

The University of Texas at Austin EERI Student Chapter gratefully acknowledges the support of the Friedman Family for sponsoring the travel of Dr. Jorge. F. Meneses through their Friedman Family Visiting Professional Program endowment.

Additionally, The University of Texas at Austin EERI Student Chapter gratefully thanks the help and support of Prof. Ellen Rathje and Prof. Patricia Clayton.

LIST OF ATTACHMENTS

Included at the end of this report are various attachments to supplement the information included above. A list of the attachments is included below:

- Flyer posted to promote the lecture



Earthquake Engineering Research Institute



UT-Austin Student Chapter

and

EERI's Friedman Family Visiting Professionals Program

present

EARTHQUAKE GROUND MOTIONS FOR A NEAR-SOURCE COMPLEX STRUCTURE

by

Dr. Jorge F. Meneses

Principal Geotechnical Engineer with RMA Group, Inc

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Wednesday, February 15, 2017

2 p.m. – 3 p.m. RLM 5.104



Any Questions? Please contact: Stalin Armijos (starmijos@gmail.com)

