

CEE 595 – Geotechnical Engineering Seminar

Wednesday, August 22, 2018
12:30pm, Newmark Lab 3310

Geotechnical Lessons learned from M_w 7.8 Subduction Event in Ecuador, April 16th, 2016

Xavier Vera-Grunauer, Ph.D, D.GE, A.M. ASCE



Abstract

On the evening of April 16th, 2016, a moment magnitude M_w 7.8 earthquake struck northern Ecuador, offshore of its west coast. The earthquake was named Muisne after the city of its epicenter, located about 29 km south-southeast of the town of Muisne, in the province of Manabí, at a hypocentral depth of 21 km. In the first 24 hours, over 135 aftershocks were recorded with hundreds more in the weeks that followed. Overall, this earthquake and its aftershocks led to hundreds of fatalities, thousands of injuries, tens of thousands homeless and an economic impact estimated at 3% of the nation's Gross Domestic Product (GDP). This lecture will present selected geotechnical reconnaissance observations, insitu testing and results from the analyses performed from this earthquake, including site conditions, earthquake-induced damage, soil amplification and liquefaction. The cases were selected based on the reconnaissance findings from the mission of the team deployed by the Geotechnical Extreme Event Reconnaissance (GEER) Association and the Applied Technology Council (ATC) with a detailed report available at www.geerassociation.org.

Xavier Vera-Grunauer earned an undergraduate degree in Civil Engineering at the Catholic University of Santiago de Guayaquil (UCSG), MS in Geotechnical Engineering at the National University of Mexico (UNAM), and a Ph.D in Geotechnical Engineering, minors in Seismology and Structural Engineering at the University of California, Berkeley. He has over 20 years of professional experience in the field of Civil Engineering and earned the Diplomate, Geotechnical Engineering (D.GE) certification from ASCE. He has worked on various engineering projects; civil, petrochemical, offshore, and port projects in Ecuador, USA, Mexico and Peru. He co-led the US-Ecuador GEER team for the M_w 7.8 Earthquake on April 16th, 2016 and He is the CEO of Geostudios, a geoscience consulting firm.