

Lessons to Civil Engineering practice from Great Chilean Earthquake (Mw=8.8), 2010.

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In 2010, the 6th largest earthquake recorded in the modern era (Mw=8.8), struck the most populated zone in the central coast of Chile affecting nearly 10 million people. A tsunami also occurred immediately after the main shock of the earthquake producing devastating damage and taking 700 lives. The majority of the infrastructure after the earthquake remained in good condition following the ground motion; however, considerable damage was observed in concrete buildings located in zones of dynamic amplification and liquefaction events occurred in many saturated sand deposits near the epicenter. This lecture presents a review of the earthquake's most significant structural and geotechnical effects, as well as a summary of main engineering lessons that impact civil design in practice. The talk will conclude by providing a brief description of the major modifications made to seismic codes following the earthquake and how these changes impact geotechnical exploration, design response spectrum, and detailing of earthquake-resistant structural elements.



Rodrigo Betanzo received a B.S. in Civil Engineering from University of Concepcion, Chile in 2007. From 2008 until the present, he has been involved in different civil engineering projects including the seismic design of steel and concrete structures as well as foundation engineering for heavy and vibratory equipment. In 2012, Rod led a seismic design project for a steel building that was completed in partnership with Japanese engineers from Tokyo. During this time, he maintained involvement with academia in Chile through conducting research, publishing, and presenting at conferences in the subject area of earthquake engineering, particularly after the magnitude 8.8 earthquake that occurred in 2010. Rod is a current graduate student of CEE at University of Illinois, pursuing his master's degree in geotechnical engineering and a current Graduate Advisor for the University of Illinois EERI Collegiate Chapter.