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PEER x Student Committee

Future of Research Series

Preparing for the Unexpected: Lessons from the Türkiye Earthquake

Speaker: Robb Eric S. Moss, Ph.D., P.E., F. ASCE

Abstract

The Feb 6, 2023 earthquake series in Türkiye resulted in widespread damage over an area roughly 300 km long by 100 km wide. The M7.8, M6.7, and M7.5 events were released in succession and produced a "one-two-three" punch of ground motions rich in long period content that resulted in significant damage to the built environment. Directivity increased the intensity of the ground motions in a southerly direction along the East Anatolian Fault. Pervasive surface fault rupturing in conjunction with widespread liquefaction produced damage and destruction of the level that hasn't been seen in a century. In order to move forward and learn as many lessons from these earthquake events as possible, reconnaissance teams were mobilized to acquire perishable data before it is gone. Robb Moss led the GEER advanced team to assess the conditions and help organize subsequent teams to target specific hazards. This talk presents a broad overview of the events and the lessons that these events have taught our earthquake engineering community.

About the Speaker

Dr. Robb Moss is a professor at California Polytechnic State University (Cal Poly) San Luis Obispo. His areas of expertise include geotechnical earthquake engineering, engineering seismology, and earthquake risk and reliability. Dr. Moss earned his Ph.D. from UC Berkeley. His research focuses on liquefaction prediction and reinvestigation, fault displacement study and ground motion prediction, and seismic soil-structure interaction. He has been a member of nine earthquake reconnaissance teams traveling to Türkiye, Nepal, Japan, Chile, Alaska, India, Mexico, and around California. Dr. Moss has years of consulting experience involving seismic geotechnics of onshore and offshore projects around the world. He is a registered professional engineer in the state of California and is a professional member of SSA, EERI, and ASCE. Dr. Moss was awarded the Middlebrooks Award by ASCE in 2007 and the Associate Editor of the Year for the Journal of Geotechnical and Geoenvironmental Engineering in 2015. He has also served as a Fulbright specialist (2017-2020). He is currently serving as an editor for the ASCE Journal of Geotechnical and Geoenvironmental Engineering.