



Vancouver Geotechnical Society

A Local Section of the
Canadian Geotechnical
Society

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NOTICE OF UPCOMING TECHNICAL PRESENTATION (ONLINE) Friday, 28 August 2020

TOPIC: Multi-hazard system reliability of distributed infrastructure

SPEAKER: Paolo Zimmaro, PhD, PE (Italy) – University of Calabria and University of California, Los Angeles

Dr. Paolo Zimmaro is an Assistant Professor at the University of Calabria in Italy. He also currently holds an appointment as a Visiting Project Scientist at the University of California, Los Angeles (UCLA). Dr. Zimmaro obtained his B.S. and M.S. (summa cum laude) degrees from the University of Calabria (Italy), and his Ph.D. in 2015 from the University Mediterranea of Reggio Calabria (Italy). After his PhD, Dr. Zimmaro joined the geotechnical engineering research group at UCLA led by Professors Stewart and Brandenburg where he worked for five years. His current research interests include geotechnical earthquake engineering and engineering seismology, with emphases on: (1) ground failure hazard characterization (including liquefaction and landslides), (2) system reliability of distributed infrastructure and lifelines, (3) probabilistic seismic hazard and risk analysis, (4) data analytics in civil engineering, and (5) advanced tools for post-disaster reconnaissance and recovery. Dr. Zimmaro currently serves as the Chair of the Professional Development Committee of the Earthquake Engineering Research Institute (EERI). Dr. Zimmaro is the recipient of the 2018 Earthquake Spectra Outstanding Paper Award and the 2018 UCLA Non-senate faculty professional development award for his research on historical seismicity.

CONTENT: Natural and anthropogenic hazards, such as earthquakes, landslides, and flooding events, can strongly affect the built environment and the life of our communities. New risk factors such as climate change, sea-level rise, and the increasing rate of induced seismicity, define new challenges for current and future generations. Furthermore, in recent years, community vulnerability and exposure globally increased as a result of an unprecedented rate of the population growth and a new, largely unplanned, urbanization development. Engineering approaches can be effectively implemented to create future resilient communities. Such procedures are traditionally based on the evaluation of the performance of individual elements of the built environment (i.e. a levee cross section, a dam, a landslide, etc.). However, our society heavily relies on infrastructural systems distributed over large areas and urban networks with interconnected lifeline systems. As a result, modern engineering frameworks should assess multi-hazard risk of critical lifeline networks and distributed infrastructure. This presentation illustrates how multidisciplinary approaches linking geotechnical engineering, data analytics, and robust probabilistic frameworks can be the key to reduce future risks and ultimately improve the resilience of our society to natural and anthropogenic hazards. Main results presented here are related to system reliability of flood-control levees. The framework can be applied to other lifeline networks and distributed infrastructure. Outcomes of this research can effectively help public agencies and other stakeholders to make informative decisions related to infrastructural systems.

DETAILS: Time: 12 – 1 pm (PDT)

Registration: <https://attendee.gotowebinar.com/register/4283582262195328780>