



Modeling the impact of climate change and extreme storm events at the nexus of the natural and built environments.

Tuesday, 14th of June 2016

Speaker: prof. John Radke
University of California Berkeley

Time 10:00-12:00

Room 2, Stecca 1 Building – Agripolis, Legnaro

Global climate change will bring about sea-level rise (SLR), greater flooding and higher storm surges in coastal regions. Analyzing impacts of catastrophic environmental events is crucial to identifying vulnerabilities and facilitating sustainable infrastructure at the nexus of the natural and built environments. We model the risk of critical infrastructure failure due to impacts from sea-level rise and extreme storms in the San Francisco Bay and Sacramento - San Joaquin Delta (Bay-Delta) regions.

Using LiDAR data for California's Bay-Delta region, we build a data-rich surface model combining bathymetry, land surface elevations and significant surface feature elevations that influence water flows, such as building footprints, levees, roadways, etc. We add to this model historic tidal and river water surface elevation data and simulate in a 3D hydrodynamic model hourly water surface elevations, over a 72 hour period during a 100-year storm event at projected future SLR. Our findings facilitate proactive designs that insure sustained infrastructure through better understanding of potential vulnerabilities posed by catastrophic environmental events.

INFO: francesco.pirotti@unipd.it