Mar 20th, 3:45 PM - 5:00 PM

Coastal Flooding under Climate Change: Can Machine Learning help?

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MONTCLAIR STATE UNIVERSITY

The Doctoral Program in Environmental Science & Management and MSU Sustainability Seminar Series Present:

Coastal Flooding under Climate Change: Can Machine Learning help?

WHEN: March 20, 2:30 pm   WHERE: CELS 110

Prof. Giovanni Coco
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Giovanni Coco obtained a PhD in nearshore oceanography at the University of Plymouth (UK). After 3 years at the Scripps Institute of Oceanography (USA) and 8 years at the National Institute of Water and Atmospheric Research (NZ), he joined the University of Cantabria (Spain) with an Excellence fellowship. In 2015 he returned to New Zealand at the University of Auckland where he is currently Professor in the Faculty of Science.

His research focuses on coastal processes using a variety of approaches that include numerical and data-driven modeling informed by field and laboratory observations. I currently work on projects dealing the hydro- and morphodynamics of the nearshore under climatic changes.

Abstract

Sea-level rise is a consequence of climate change and the main driver of increasing coastal flooding over the twenty-first century. This presentation describes recent developments in downscaled wave climate, storm surge and sea-level rise modelling for Aotearoa New Zealand to project extreme total water. We assume that future total water levels can be calculated through the summation of tides, storm surge, wave runup and sea-level rise, allowing to investigate future overwash potential. Additionally, the presentation will explore how 'machine learning' techniques can enhance our studies, leading to better predictions and reduced uncertainty in understanding coastal flooding.

For more information please contact Jorge Lorenzo-Trueba at lorenzotruej@montclair.edu