Sep 16th, 3:45 PM - 5:00 PM

What does the 100-year flood hazard map mean? Uncertainties with the approach and temporal evolution of events

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

What does the 100-year flood hazard map mean?: Uncertainties associated with the approach and temporal evolution of events

WHEN: September 16, 3:45 pm WHERE: Zoom Link

Dr. Sara Santamaria-Aguilar
University of Central Florida

Dr. Santamaria-Aguilar is a postdoctoral researcher in the Department of Civil, Environmental and Construction Engineering & National Center for Integrated Coastal Research of the University of Central Florida (UCF). She has a degree in Oceanography from the University of Vigo (Spain; 2010) and a master's in integrated Coastal Zone Management from the University of Cantabria (Spain, 2012). She completed her PhD at the University of Kiel (Germany; 2021), in which she assessed trends and variabilities of extreme water levels. Sara joined UCF in Summer 2022 and started working in the NSF funded The Megalopolitan Coastal Transformation Hub (MACH), in which 13 institutions collaborate to support decision making to manage climate-change-related risks through research focused at the intersection of natural and human systems. Her research focuses on modeling compound flooding from different combinations of drivers to support decision-makers in developing flexible climate adaptation strategies.

Flood hazard maps are an essential tool for cities and communities worldwide and are used for a variety of purposes such as city planning, insurance and emergency management. Flooding rarely occurs from a single water source (e.g. storm surge, tides, rain and river discharge) and commonly arise from a combination of them, the so-called compound events. Thus, assessing flooding from compound events has become essential to inform decision-makers as these events can exacerbate flood impacts compared to single-driver events and may require different adaptation strategies. There is no standard approach to assess compound flood hazard and uncertainties and differences between approaches are not well understood. In this talk, I will provide a broad introduction about compound events and the main approaches used to assess compound flood hazards. I will show differences in compound flood hazards depending on the approach used for a case study in a city in New Jersey and discuss potential implications.

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