Multi-hazard Risk Analysis in Coastal Regions
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Abstract
Coastal systems around the United States are densely populated regions with rich ecosystem diversity and economic resources. Understanding the interaction between oceanic and hydroclimatic forces over the coastal systems is of paramount importance, but still challenging, for hazard prediction, infrastructure resilience, and sustainable water resources management. Here, we discuss the challenges we face in appropriate characterization of extreme and non-extreme (e.g. nuisance flooding) coastal hazards in the face of trending anthropogenic and natural hazards (i.e. sea level rise). The advanced probabilistic tools useful for appropriate characterization of such hazards and dealing with the aforementioned difficulties will also be discussed.

Background
Dr. Hamed Moftakhari is an assistant professor in the Department of Civil, Construction, and Environmental Engineering and is affiliated with the Center for Complex Hydro-systems Research at the University of Alabama. His research is in the area of coastal hydrology, and involves multi-hazard risk analysis and integrated coastal/estuarine hydrodynamic modeling. He explores how the interaction between inland hydrologic processes and coastal ocean processes would affect resources, such as food, energy, and water in the low-lying coastal regions, and how the response of affected communities would mitigate/intensify the impacts.