

NSF EarthCube's Distinguished Lecturer

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Climate change impacts on coastal groundwater resources: considering land-ocean interaction models and in situ data

Friday, Sep 2, 2016, at 10:00 am

Location: Room 324 in Building ENG-2

Abstract

Climate change and sea-level rise are likely to increase the frequency and intensity of land-ocean interactions. Ocean surges are one such interaction, which can severely damage coastal groundwater resources in addition to surface infrastructure. To understand groundwater salinization induced by ocean surges, salt transport was simulated by integrated modeling of surface and subsurface flow. To understand the mobility of trace elements, combined biogeochemical and hydrological in situ data were collected in a tidal system on different time scales. The study has important implications for the following questions:

- What are the dynamic pathways of water and salt transport during and after ocean surges?
- How do ocean surges alter local hydrology?
- What new observations are needed to improve our understanding of the physical and biogeochemical processes in coastal areas?
- How will climate change and human activities affect the coastal environment?

Bio-Sketch:



Dr. Xuan Yu is one of 15 Distinguished Lecturers in the NSF EarthCube Program. Xuan holds a B.S. in hydrogeology from China University of Geosciences and a M.S. in water resources engineering from China Institute of Water Resources and Hydropower Research. Xuan earned his Ph.D. in Civil Engineering from the Pennsylvania State University. He is currently a postdoctoral researcher in the Department of Geological Sciences at the University of Delaware working with Drs. Holly Michael and Donald Sparks.