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Department of Marine Sciences
Presents a Seminar by

Timothy Crone
Lamont-Doherty Earth Observatory

The big-data ocean science revolution: Using Pangeo to process large amounts of oceanographic video data in the cloud

The Earth and oceanographic sciences are experiencing a data science revolution driven by the proliferation of observing systems that make enormous quantities of data available to scientists in near-real-time. Model-focused research faces similar issues with the availability of ultra-high resolution output from sophisticated oceanographic and climate models (e.g., CMIP6). The datasets now available present challenges for analysis pipelines that rely on a "download model" for data ingestion, which are becoming less and less viable as the datasets become larger. One solution is to move the data and the computational resources into the cloud, proximal to each other, such that the compute can elastically scale horizontally in response to analysis demands, and data is never "downloaded". In this talk we will discuss these issues in more detail, and use Pangeo (<http://pangeo.io>) and the commercial cloud to process a large amount of data from the OOI high-definition video camera that is deployed at Axial Seamount in the northeast Pacific. We will work through a live demo in the cloud using a large number of compute nodes on Azure. If we have time, we will talk about new paradigms for the publication of scientific discoveries that are now possible using open-source tools for reproducibility such as GitHub, Binder, Intake, and Jupyter, and are an exciting outgrowth of the big-data revolution in this field.

Host: James O'Donnell

Time & Date: 11:00 am, Friday, November 22, 2019

Place: Marine Sciences Building, Seminar Room 103

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