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UNIVERSITY OF CONNECTICUT

Department of Marine Sciences  
Presents a Seminar by

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## **Pathways of the upper-ocean and overturning circulation in the Atlantic**

The Atlantic Meridional Overturning Circulation plays an important role in regulating the climate system by aiding in oceanic heat transport. It is composed of a northward flowing upper-limb made up of relatively warm, low-density waters and a southward flowing lower-limb made up of relatively cold, high-density waters. While the North Atlantic remains one of the most sampled ocean basins, less is known about the pathways of the upper-ocean and the overturning circulation in the South Atlantic. Here we revisit pathways of the upper-ocean and overturning circulation in both the South and North Atlantic from an observational viewpoint. We employ Markov chain transition matrices along with transition path theory and Lagrangian observations to study these pathways. The observational data are primarily composed of surface drifter and subsurface float data. This method allows us to build a probabilistic mean view of likely pathways connecting different regions in the Atlantic. We focus on three key regions: Source waters of the South Atlantic, pathways connecting the South and North Atlantic basins, and deep-water pathways of the North Atlantic.

**Host:** Jim O'Donnell

**Time & Date:** 11:00 am, Friday, October 7, 2022

**Place:** Lowell Weicker Building, Seminar Room 103 (or WebEx)

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