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Department of Marine Sciences
Presents a Seminar By

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Polarimetric Radar Observations of Northeastern U.S. Winter Storms

Nature continues to provide us with harsh reminders of how high-impact (but difficult-to-forecast) winter coastal storms can be for the northeastern United States. The evolution, structure, and impacts of such storms are governed at a range of scales, from synoptic atmospheric drivers down to microphysical processes. Traditionally, radars have been important tools for remotely sensing the mesoscale structure of these winter storms, but until recently have only offered limited insights into the microphysical processes that contribute to impacts felt at the surface, such as extremely heavy snow and precipitation type transitions.

The U.S. network of operational radars has recently undergone an upgrade, giving all 160 radars new capabilities to provide a wealth of information about the microphysical structure of storms. The upgraded radars now transmit and receive electromagnetic radiation at two orthogonal polarizations. Such dual-polarization radar measurements can be used to remotely characterize hydrometeor shapes, sizes, and physical compositions.

In this talk, the basic principles of polarimetric radars will be discussed, including a physical interpretation of the different measurements. Then, examples of polarimetric radar observations from recent winter coastal storms in the northeastern U.S. will be presented. These examples will highlight the utility of polarimetric radar measurements for diagnosing regions of dendritic growth and subsequent heavy snow, precipitation transitions including rain to snow and freezing rain to ice pellets, and even cloud electrification preceding lightning strikes.

Host: Kelly Lombardo

Time & Date: 11:00 am, Friday, February 13, 2015

Place: Marine Sciences Building, Seminar Room 103

Please see this [page](#) for cancellations and additional seminar information, email marinesciences@uconn.edu, or call 860-405-9152 or 860-405-9151