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Department of Marine Sciences Presents a Seminar By

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Observations of Supercells and Tornadoes Using Emerging Radar Technologies

Over the past ~15 years, there has been a significant advancement in knowledge regarding severe thunderstorms and tornadoes through the use of high-resolution data from high-frequency, truck-mounted, mobile Doppler radar systems. More recently, two advanced radar technologies, phased-array radar (PAR) and dual-polarization radar, have offered promise as a way to learn even more about severe weather systems. PAR allows for the collection of increased temporal resolution data of the phenomenon being studied. In turn, the processes that a quickly-evolving feature undergoes can be analyzed more accurately. The latest results from studies of tornadoes using the first mobile PAR data obtained in severe storms are discussed. The focus is on basic but unanswered questions regarding tornado processes: how do tornadoes form and dissipate in time and height? Dual-polarization radars scan with the same update times as conventional mobile Doppler radars, but provide information about several characteristics of the hydrometeors being sampled. This information also can provide insight into processes occurring within the phenomenon of interest. Analyses of polarimetric-approximations for raindrop sizes are presented with a focus on potential differences in the raindrop sizes between tornadic and non-tornadic supercells observed during a recent field experiment. To conclude, a brief discussion will follow on the future of these two radar technologies in both a research and operational setting, and how the future weather radar network may shape efforts to validate results from these case studies.

Host: Kelly Lombardo
Time & Date: 11:00 am, Friday, April 29, 2016
Place: Marine Sciences Building, Seminar Room 103

Please see this page for cancelations and additional seminar information,
email marinesciencesseminars@uconn.edu, or call 860-405-9152 or 860-405-9151