

12.9 ARM CLOUD RADARS AT THE EASTERN NORTH ATLANTIC SITE: AN UPDATE

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The Atmospheric Radiation Measurement (ARM) research facility strategically deploys and operates a wide variety of instrumentation around the world to better understand atmospheric processes. As a part of the instrument suite, radar systems provide the ability to observe cloud and precipitation particles over a broad region at a high temporal and spatial resolution. The ARM radar group operates several scanning and vertically pointing polarimetric radars at multiple frequencies across the globe that are designed to observe clouds and precipitation in marine, continental, and arctic environments at fixed and mobile sites. Graciosa Island in the Azores is home to one of the fixed and is designated Eastern North Atlantic site (ENA). Observations of marine clouds and precipitation events are a primary focus of the radar instrumentation there.

A significant effort has gone into the development, characterization, and calibration of the scanning and vertically pointing cloud radars at the site. Recently, ENA was the focus of an extensive field campaign that included both ground-based and aircraft-base instruments: Aerosol and Cloud Experiments in the Eastern North Atlantic (ACE-ENA). This work will summarize the system cloud radar characterization and calibration efforts at the site, discuss the ACE-ENA campaign, and showcase recent data collected with the cloud radar systems.