ORCESTRA

THE FIELD STUDY

ORCESTRA (Organized convection and EarthCARE studies over the tropical Atlantic) is a European-initiated field study to investigate the organization of tropical clouds in and around the Intertropical Convergence Zone (ITCZ): from shallow to deep clouds, from randomly distributed clouds to highly aggregated cloud clusters. The field study will also serve as a benchmark for a new generation of satellite remote sensing and high-resolution storm-resolving models.

WHY

ORCESTRA builds on the work of many previous campaigns, in particular GATE (1974) and EUREC4A (2020). This time, the focus is on understanding the drivers and estimating the impact of mesoscale convective organization in the tropics, with particular focus on the Atlantic ITCZ.

WHEN AND WHERE

The field study will take place between 10 August and 30 September 2024 with operations based out of Cape Verde and Barbados. The operation area ranges from 20°N to 5°N and 60°W to 20°W.

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HOW

Intensified measurements will involve the deployment of three research aircrafts, one research vessel, two observatories, a new generation of earth observational remote sensing and state-of-the-art storm-resolving modelling. ORCESTRA is subdivided in eight sub-campaigns, tackling the overall objectives from different scientific angles.

MEASURING INSTRUMENTS AND PLATFORMS

1 atmospheric observatory on Cabo Verde

1 cloud observatory in Barbados

3 aircrafts (ATR-42, King Air, HALO)

1 research vessel (RV Meteor)

1 Sea-Going Polarimetric (SEA-POL) Radar

4 Drones

700 radio sondes

900 drop sondes

Further buoy stations, remote sensing platforms, radars, lidars, and many more

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