

Lagrangian LES of Cloud Organization from EUREC4A

Friday 7 May 2021 16:00 (1h 45m)

The EUREC4A field campaign took place in the subtropical North Atlantic Ocean during January and February 2020. An array of in situ and remote sensing observations of the atmosphere and ocean around Barbados were gathered by an array of platforms including aircraft, ships, satellites and the ground-based Barbados Cloud Observatory. Our focus is on the evolution of marine boundary layer cloud and its organization along quasi-Lagrangian trajectories approaching Barbados. This evolution is studied in 2-3 day long large eddy simulations (LES) along trajectories that follow winds in the marine boundary layer. Large-scale forcing are derived from ECMWF analysis and reanalysis, and the simulations are validated against remote sensing and in situ observations gathered during the campaign.

Early results will be presented at the meeting, including case studies with observed cold pools near Barbados on February 9 and shallow cumulus with broad inversion cloud (i.e., “flowers”) in an air mass that arrived near Barbados on February 2nd.

Authors: BLOSSEY, Peter (University of Washington, Seattle); NEGGERS, Roel (University of Cologne); GHAZ-AYEL, Salima (University of Cologne); BOEING, Steven (University of Leeds); DENBY, Leif (University of Leeds); Mr EASTMAN, Ryan (University of Washington); SCHULZ, Hauke (Max Planck Institute for Meteorology)

Presenter: BLOSSEY, Peter (University of Washington, Seattle)

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