

EUREC4A Press Release

January 28, 2019 (Bridgetown, Barbados) — The first major planning and coordination meeting for the field campaign EUREC⁴A (*Elucidating the Role of Clouds-Circulation Coupling in Climate*) will be held at the Caribbean Institute for Meteorology and Hydrology (CIMH), Husbands, St. James, Barbados from 18-19 (TBC) February 2019. EUREC⁴A is a capstone field experiment of the World Climate Research Programme (WCRP) designed to significantly enhance scientific understanding of the role of Trade-wind cumuli, which represent the most frequent cloud occurrence on Earth and commonly seen in the Caribbean, in controlling the magnitude and pace of future global warming. Data collected over the ocean east of Barbados will form the basis for significant improvements to our understanding of tropical meteorology, which will drive significant enhancements to the predictive capability of existing regional and global weather and climate models. These outputs will be important for disaster risk reduction and sector planning activities globally but especially across the Caribbean. Results will inform investments for sustainable development and enhance long term climate resilience activities in key socio-economic sectors.

The EUREC⁴A field campaign will occur between 20 January - 20 February 2020, and will bring together teams from German, French and Caribbean institutions (as well as US and other European participants) to collect ocean and atmospheric data using a multitude of research aircraft, ship and ground-based platforms. EUREC⁴A is motivated by the previously successful campaigns - Next-generation Aircraft Remote Sensing for VALidation studies (NARVAL)-1 and NARVAL-2 conducted by German and Caribbean institutions in January 2013 and August 2016 respectively and the international prominence of the Barbados Cloud Observatory, which has collected an extensive set of daily atmospheric measurements across multiple instrument platforms since its establishment in 2009 at Deebles Point located along the east coast of Barbados.

The EUREC⁴A is designed to further benefit from data collected from additional partnerships which will bring additional state-of-the-art instrument platforms that will further enhance data collection.

Key statements from:

Dr. Bjorn Stevens - Director of the world renowned Max Planck Institute for Meteorology, Hamburg, Germany, says: “A year from now the world will be coming together over the seas east of Barbados to tackle some of the most challenging and important problems in climate science.” Dr Stevens, who with Dr Bony conceived of the project and co-leads its European contributions, adds: “the EUREC⁴A field study is a joint European (French/German) and Caribbean effort, that culminates two decades of research to better understand how clouds influence the response of climate to increasing CO₂ concentrations, and weather and climate more generally. EUREC⁴A builds on nearly ten years of joint work with CIMH, a cooperation that has laid the ground work for the planned field operations”. Additionally, “Findings from EUREC⁴A are expected to make a central contribution to efforts to anticipate future global warming, and how this warming impacts quantities as diverse as the sea-level rise, changing patterns of precipitation, and the distribution of major wind systems. EUREC⁴A is also opening new levels of inquiry into how the atmosphere and ocean communicate. Measurements will be influential for a new generation of scientists trying to understand what governs ocean small-scale current systems and their effect on ocean biology

and sea-grass, as well as factors influencing major forms of renewable energy, such as wind and solar.

Dr. Sandrine Bony - one of the scientific PIs of the EUREC⁴A field campaign, senior scientist of the French National Center for Scientific Research (CNRS) at the Laboratory of Dynamical Meteorology in Paris (France) and laureate of the European Research Council Advanced Grant EUREC⁴A, noted that “EUREC⁴A is a field project motivated by 15 years of research on the role of clouds in climate and climate change. Narrowing the uncertainty in global and regional projections of our future climate requires a better understanding of how clouds, and trade-cumuli in particular, will respond to their changing environment, and how this response will affect Earth’s temperature and circulation patterns.

EUREC⁴A’s cutting-edge instrumentation and novel experimental strategies will transform our scientific understanding of the factors that control the cloudiness of the trade-wind regions, their impact on Caribbean meteorology and on global climate. Data collected will be used for decades as a benchmark for advancing the development of a new-generation of weather and climate models, and improving our capability to probe and monitor the atmosphere and Earth’s surface with satellite remote sensing. This will also be an opportunity to reaffirm and strengthen the synergy and scientific cooperation between France, Germany and the Caribbean.”

Dr. David Farrell - Principal of CIMH noted that “CIMH is excited to be a part of the international collaboration bringing the EUREC⁴A campaign to Barbados, as it represents one of the most significant ocean and atmospheric experiments conducted in many years with the outcomes of the various studies expected to significantly improve the predictive accuracy of weather and climate models over the tropics, leading to significant improvements in weather and climate early warning systems and considerable strengthening of the region’s resilience to severe weather and climate shocks, resulting in reduced loss of life, property and investment from these events.”

Dr. Farrell further stated that “EUREC⁴A has the potential to transform ocean and atmospheric research in the region by making available vast amounts of new data and presenting opportunities for new global collaborations and partnerships leading to cutting edge research. Already there is expressed interest among interested parties to participate given the opportunities for new and transformative career building research. It is expected that EUREC⁴A will transform the state of knowledge about the region’s oceans and atmosphere as well as spawn many theses and research publications that will transform Caribbean science and innovation, leading to significant social and economic benefits in the coming years.”