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NaFoLiCA - Namib Fog Life Cycle Analysis

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The life cycle of Namib-region fog and the factors driving its development are studied in a project commenced in 2017, and conducted jointly by groups in Germany and Switzerland with partners in Namibia.

In the hyperarid Namib desert low clouds and fog are frequently encountered and are suspected to play a role in the hydrological cycle as well as the radiation balance. Due to a lack of observations little is known to date on the dynamics and drivers of this phenomenon. In the Namib Fog Life Cycle Analysis (NaFoLiCA) project we combine in-situ observations with satellite-based remote sensing and numerical weather prediction to understand the processes and their effects on the system scale.

In a field campaign conducted in September 2017 we observed profiles of fog events in a location near the coast and another further inland, complemented by meteorological and hydrological observations on a network of sites. These observations are used to improve satellite-based retrievals of fog and low clouds and their microphysical properties. Geostationary satellite data, complemented by active sensor information, is evaluated based on algorithms developed for Europe, and the use of computer vision approaches (see contribution by Andersen & Cermak, session AS 3.13). Numerical weather prediction is informed by insights gained from the in-situ observations and evaluated on the satellite product (see contribution by Hacker & Bott, this session).