



The vertical and spatial structure of fog events in the Namib Desert

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The stratocumulus deck over the South Atlantic is regularly advected into the hyper-arid Namib where it appears as fog when it intercepts with the ascending terrain. This fog is a major source of water for plants and animals. The project Namib Fog Life Cycle Analysis (NaFoLiCA) aims at improving the knowledge about the vertical and spatial patterns of this fog through three subprojects using field measurements, remote sensing and numerical modelling.

For this purpose, an intensive operation period (IOP) was conducted between 10th September and 5th October 2017 in the central Namib. The measurements were linked to the FogNet network with main activities taking place at the Gobabeb research and training centre. During the IOP, micrometeorological data including cloud base height, fog deposition, liquid water path and vertical profiles of wind speed and direction were measured continuously. Additionally, profiles of temperature and relative humidity were sampled during five selected nights with stratus/fog using tethered balloon soundings, drone profiling and radiosondes. Measurements took place at both coastal and inland sites as well as on different elevation levels in order to gather data on the spatial dynamics of the fog events. Fog droplet distribution was measured with a cloud droplet probe and liquid water content/liquid water flux estimated with a co-located sonic anemometer. The fog events exhibited considerable spatial and temporal variation between single events and within the network. Selected results from the IOP will be presented with the focus on the development of one fog event.