



Fog and low clouds in the Namib: Patterns and processes

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This contribution presents spatiotemporal patterns of fog and low clouds (FLC) in the Namib region and uses a statistical learning technique to show that most of the spatiotemporal variability of FLC in the central Namib can be explained by large-scale dynamics.

Fog is a defining element of the Namib-region climate and a crucial source of water for many species and ecosystems. Still, little is known on the patterns and processes of Namib-region FLC, in large parts due to the very sparse observational records. In this contribution, data from multiple satellite platforms and station measurements are used to paint a coherent picture of the spatial and temporal patterns of Namib-region FLC. Observations are analyzed on different scales and combined with reanalysis data and modelled air-mass backtrajectories. The main findings are:

- 1) There are distinct seasonal patterns in FLC height.
- 2) The timing of the start of the diurnal FLC cycle and the distance to the coastline are strongly correlated.
- 3) The variability of the overall FLC coverage in the central Namib is driven by the large-scale dynamics.

The findings lead to a better understanding of Namib-region FLC and help broaden the understanding of low clouds along the southwestern African coastline and the southeast Atlantic.