Geophysical Research Abstracts
Vol. 21, EGU2019-18036, 2019
EGU General Assembly 2019

An animated combination of satellite and ground measurement to visualize fog as a water source

Roland Vogt, Robert Spirig, Christian Feigenwinter, and Andreas Wicki
Atmoshperic Siences, Univeristy of Basel, Switzerland (roland.vogt@unibas.ch)

Different spatial/temporal scales are often a problem for any combination of satellite data and ground measurements. Especially water in the form of clouds poses a challenge as satellites see the cloud surface and ground measurements are below or in the clouds as is the case for fog. In arid and semi-arid areas such as the Namib, this fog presents the main water input and is thus of high interest. Fog occurrence is dominantly a consequence of the stratus dynamics over the South Atlantic Ocean off the Namibian coast and as such a boundary effect of a large-scale process. Although there is good spatial coverage of the fog zone with FogNet stations the synopsis of the point measurement is a challenge and it is not always obvious whether we observe fog as a spatially coherent event or whether it is something happening locally.
To overcome this shortcoming we combine Meteosat images in spectral combinations, where the fog/stratus is visualized best, together with FogNet observations of fog precipitation and wind speed and wind direction. All data are assembled in a map every 15 min and animated 48h sequences of these maps of each time step are produced upon detection of a fog event. Within 24h the sequence is available on the internet as a movie. Users can also start this process manually and select a different time, duration and/or band combinations.
Our poster describes the motivation for the production process, its workflow and shows a few select examples. After monitoring the fog life cycle by means of the combination of in situ and remote sensing data there is overwhelming evidence that fog in the coastal area of the central Namib is dominantly the consequence of the inland advection of the fog/stratus from the Atlantic, and radiation fog plays only a minor role (if at all).