Geophysical Research Abstracts
Vol. 15, EGU2013-5367, 2013
EGU General Assembly 2013

The Fennec Automatic Weather Station (AWS) Network: monitoring the Saharan Climate System

Matt Hobby and the Fennec UK Team
United Kingdom (mhobby@env.leeds.ac.uk)

The Fennec Automatic Weather Station (AWS) network consists of eight stations installed across the Sahara desert, with four in remote locations in the central desert, where no previous meteorological observations have existed. The AWS measure temperature, humidity, pressure, wind speed, wind direction, short-wave and long-wave radiation (upwelling and downwelling), ground heat flux and ground temperature. Data are recorded every 3 minutes 20 seconds i.e. at three times the temporal resolution of the World Meteorological Organisation's standard ten-minute reporting for winds and wind gusts. Variations in wind speeds on shorter time scales are recorded through the use of second and third order moments of 1-Hz data. Using the Iridium RUDICS service, data are transmitted in near real time (1 hour lag) to the UK, where calibrations are applied and data are uploaded to the GTS, for assimilation into forecast models.
In this presentation we describe this unique dataset, sources of error, and possible application for understanding key features of the region. We will discuss the use of the second moment of the wind-speed distribution in improving estimates of the dust-generating potential of observed winds.