The new WegenerNet Climate Station Network Web Portal - A Gateway to over 10 Years of High-resolution Precipitation Data

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WegenerNet - Brief Overview

a) Feidtbach Region (FBR)
- 154 meteorological stations within 23 km x 18 km area
- main parameters: air temperature, relative humidity, precipitation, wind and soil moisture
- 5 minute sampling
- automatic processing system (data transfer, quality control, generation of weather and climate data products)
- interpolated gridded data for main parameters (200 m x 200 m UTM)
- data provided at data portal (www.wegenernet.org)
- data available since January 1, 2007

b) Johnsbacltal (JBT)
- 11 meteorological stations (plus 1 hydrographic station)
- stations operated by Wegener Center and several partner organizations
- alpine setting, altitudes ranging from below 700 m to over 2100 m
- main parameters: air temperature, relative humidity, precipitation, wind, radiation, and snow depth
- 10 minute sampling
- automatic processing system
- quality controlled data provided at data portal (www.wegenernet.org)
- data available partly since October 2010, partly since January 2007

Web Portal (www.wegenernet.org)

After almost two years of development, the new web portal went online in March 2017. It gives access to 10 years of high-resolution station and gridded data.

A) Station data
- Station selection (1)
- Station details (2)
- Parameter selection (3)
- Data plots (4)
- CSV Data download (5)
B) Grid data
- Display and download of gridded (200 m x 200 m) data

Station Data - Precipitation Data Time Series

Station data are available for all stations in different temporal resolutions. From 5 minutes over half-hourly, hourly, daily, monthly to seasonal and annual. Figs. 4a-e show examples of precipitation data plotted using the web portal for three WegenerNet FBR stations (54, 77, and 84) with increasing temporal resolution and detail. The stations represent a west-east cut through the region (see Fig. 3 for locations) and thus allow to see the differences in precipitation between the western and eastern borders of the study region.

Gridded Data - Precipitation Data Maps

Station data are interpolated onto a regular 200 m x 200 m resolution UTM grid. Like station data, gridded data are also available in all the different temporal scales from 5-minutes to annual. Figs. 6a,b show two examples for gridded daily precipitation data, and Figs. 6c,d show hourly precipitation. The dates of the images are in the range of dates shown in Figs. 4c,d, thus a direct comparison to the station data is possible.

Daily precipitation data

Figs. 4a and 4b: Daily precipitation series at June 23 (left) and June 24 (right), 2009

Hourly precipitation data

Figs. 4e and 4f: Hourly precipitation series at June 29, 2010 at 19:00 (left) and 20:00 (right)

5-minute precipitation and temperature data

Fig. 7a shows a 5-minute precipitation sum of the convective event depicted in Fig. 5. The corresponding temperature anomaly grid is shown in Fig. 7b.