

Remote Sensing

Radiosounding

When exact information about the vertical structure of the atmospheric parameters are required, radiosondes are the preferred and most-accurate observations systems. Radiosondes, which are usually launched attached to a weather balloon, provide highly temporally resolved profiles of temperature, air pressure, humidity, and wind direction as well as wind velocity.

The weather balloon used for the sonde ascent is usually filled with such an amount of helium that the ascent rate of the radiosonde is 3-4 m/s.

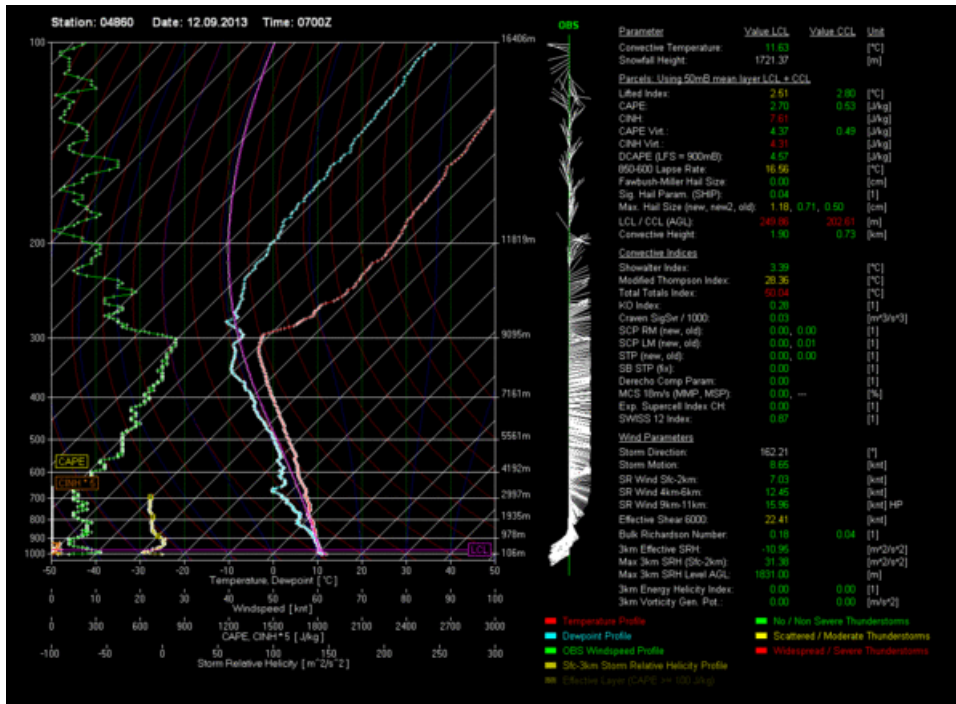




The radiosonde system DigiCORA® sounding system MW31

At TROPOS the sounding system DigiCORA® Sounding System MW31 of Vaisala company is used. With this system the worldwide most-used type of radiosondes RS92-SGP can be launched

An example of a atmospheric sounding is shown in Figure 1.



Atmospheric sounding aquired during at the TROPOS field site of Melpitz on 12 September 2013.

Application at TROPOS

At TROPOS, radiosondes are used for the following applications:

- To investigate cloud processes as ice formation and cloud droplet formation
- To determine air pressure, temperature, and humidity for the calibration of lidar measurements and of microwave radiometers
- To initialize numerical models and to interpret and validate model results

Additional information

- Website of the Vaisala sounding station

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