

Comparison of disdrometer derived and ECMWF wind velocity data at Athalassa, Cyprus

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Three years of disdrometer data has recently been collected near Athalassa, Cyprus. Vertical and horizontal wind velocities are compared to the derived Drop Size Distribution (DSD) spectra for selected dates. In addition, comparisons are made to disdrometer derived Z-R relationship between disdrometer derived rainfall rate and disdrometer reflectivity, based on a power law using A-b parameters. A previous conjecture that a relationship between A-b parameters and vertical velocity may at least partly explain the sometimes wide variation of A-b values is examined. Reanalysis fields from the European Centre for Medium-Range Weather Forecasts (ECMWF) are used to extract vertical and horizontal wind velocities as well as Temperature (T) for the selected dates. ECMWF data was chosen because of higher resolution in the horizontal plane than other available online sources. The vertical velocities are retrieved as pressure tendencies (hPa/s) and are subsequently converted in m/s, adopting the hydrostatic balance and the equation of state for dry air.