



## Radar-disdrometer comparison during rain events over the urban area of Rome

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Pludix, a rain-gauge disdrometer in X-band (9.5 GHz), has been installed in September 2007 in the La Sapienza University area, at about 13 Km far from the C-band (5.5 GHz) polarimetric Doppler radar Polar55C. The radar is located in the south-east of the city of Rome (Italy), in the Tor Vergata research area. One-minute disdrometer data, representing the number of drops per 21 class diameter, have been continuously recorded since then, allowing the retrieval of the reflectivity and the rain rate at the ground level. PPI radar scans were done over the full 360° in azimuth and at six elevations. The time interval between the PPI scans is 5 minutes. In the first part of the work, some convective and stratiform events have been selected using disdrometer and radar data. The events microphysics were analysed using the disdrometer, in terms of drop size distribution (DSD) parameters and rainfall integral parameters. In the second part of the work, the disdrometer DSD, rain rate (R) and reflectivity (Z) measurements were compared to co-located radar measurements for a number of rain events and analysed in terms of Z-R relationship (also used for the radar calibration). Finally, the synergy of a radar hydrometeor classification method and of the disdrometer data is used for the microphysical characterization of some rain events.