

## **O-19: THE QUASI-BICENTENNIAL DAILY RAINFALL SERIES OF THE UNIVERSITY OF GENOVA: DATA ANALYSIS AND ACCURACY ASSESSMENT**

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The University of Genova maintains a historical series of temperature and rainfall measurements spanning over a period of about two centuries. It was recognised as a long-term observing station by the World Meteorological Organization in June 2021 (Resolution 5 - EC73) for more than 100 years of meteorological observations. The Meteorological Observatory of the University of Genova is operational since January 1st, 1833. The series is uninterrupted, and instruments are positioned, since the starting date of observations, on the terrace of the same University Building, in the historic centre of the town.

The presence of dedicated personnel at the observatory lasted until 1994, when an automatic meteorological station SIAP UM7525 was installed, using the tipping-bucket gravity-based principle with a funnel of 1000 cm<sup>2</sup> and a resolution of 0.2 mm. A tipping-bucket rainfall recorder (SIAP UM8100) had been used before, to write on time charts with daily or weekly duration the sign of each tip. The collector was still of 1000 cm<sup>2</sup> and each step of the pen arm corresponded to 0.2 mm. Each complete up and down stroke of the pen arm therefore sums up to 10 mm of rainfall.

Daily rainfall records are available over the whole observing period, while data are recorded at the temporal resolution of 1 hour from 2002 to July 2021 and 10 minutes since August 2021.

In this work, the quasi-bicentennial daily rainfall series of the University of Genova is analysed to present its main statistical features and observed trends. Although a succession of relatively wet and dry periods out of a significant year-to-year variability is evident, the series does show a quite constant mean value of about 1745 mm/year, at least until the end of the last century. A slight downward trend can be seen, of about 0.24 mm/year, due to a very high value observed in the year 1872 (> 2700 mm). The very last period of observation (about 20 years) shows a significant downward trend with a loss of about 16 mm/year. The observed behaviour is also compared in this work with daily rainfall series from other European locations where a centennial record is available, to show the very local nature of some of the observed features.