



The urban "Climate Network[®]" temperature interpolation at the site of the Milano-Brera historical series

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The historical meteorological series of Milano Brera (a site today almost in the city centre, with records backing to the 18th century) is one of the longest in the world, but is affected by the continuous development of the surrounding urban environment, with enhanced heat waves episodes. Already treated for data homogenization, it represents an invaluable data set for urban climate evaluation in comparison with nearby standard non-urban meteorological stations and for global warming investigations. The meteorological record is unfortunately affected in recent times by missing data: nevertheless, other meteorological stations in the city area have some overlapping periods and sufficient characteristics to allow an attempt of data estimation at the historical site.

Of special importance under this respect is the recently installed Climate Network[®] (CN), owned and managed by Climate Consulting Srl. Based on high standard instrumental homogeneity and regularly tested under strict metrological procedures as in the framework of the EURAMET Joint Research Project MeteoMet, it represents a valuable tool to describe the present urban climate and monitor its long term changes. Moreover, the CN high quality data and the number of its urban and suburban stations (19 stations in 2013) allow considering suitable interpolation methods in the relatively small and homogeneous urban Milano area, in order to simulate the Brera site data and estimate uncertainties.

An attempt in this direction using the first data sets demonstrates feasibility and shows the obtainable accuracy. In this paper methods and procedures are described and first results discussed with special reference to temperature uncertainty estimation in historical and present data: even if obtained through interpolation, estimated values at the Brera site have a smaller uncertainty than the historical time series.