

Title

Continuous meteorological observations in the historical center of Naples – Naples (Campania region – ITALY) during the period from 01 Jan. 2017 to 31 Dec. 2018.

Authors

Musto, Ferdinando Maria, Interdepartmental Research Center L.U.P.T. - Laboratorio di Urbanistica e Pianificazione del Territorio - University of Naples "Federico II".

Fortelli, Alberto, Interdepartmental Research Center L.U.P.T. - Laboratorio di Urbanistica e Pianificazione del Territorio - University of Naples "Federico II"

Abstract

Weather data monitoring is ongoing since 2015 at L.U.P.T. ("Laboratorio di Urbanistica e Pianificazione Territoriale" of the University of Naples "Federico II"), located in Via Toledo, within the historical center of Naples. The meteorological station was installed in order to study the local process of Urban Heat Island, very challenging goal due to the complex orography and the closeness to the sea surface. The uploaded dataset includes data (temperature, relative humidity, wind, solar radiation, UV radiation, rain and barometric pressure) acquired at the L.U.P.T. automatic weather station (model: DAVIS Vantage Pro2 Plus - wireless) during the period Jan. 2017-Dec. 2018.

Event:

Latitude: 40.846651 * Longitude: 14.249119

Elevation: 50 m a. s. l. * Location: Via Toledo, Naples, Italy

Date/Time Start: 2017-01-01T00:00:00 * Date/Time End: 2018-12-31T23:50:00

HEIGHT above ground: 48 m (barometer) * 50 m (thermo-hygrometer, pluviometer) * 54 m (anemometer)

Table 1: Technical specifications of the sensors of the used meteorological station - model DAVIS Vantage Pro2 – Plus - wireless (see at <https://www.davisinstruments.com/support/vantage-pro2-plus-wireless-stations/>).

sensor	parameter	resolution and unit	range	accuracy	update interval
thermometer	air temperature	0,1°C	- 40,0 to 65,0°C	+/- 0,3°C	10-12 seconds
hygrometer	relative humidity	1 %	1-100%	+/- 2%	1 minute
anemometer	wind speed	0,4 m/s	0,4-89 m/s	+/- 1 m/s or 5% (greater one)	3 seconds
anemometer	wind direction	1°	0-360°	+/- 3°	3 seconds
pluviometer	rainfall amount	0,25 mm	0 – 999,8 mm	+/- 4%	20-24 seconds
pluviometer	rainfall rate	0,1 mm/h	0-2438 mm/h	+/- 5%	20-24 seconds
barometer	barometric pressure	0,1 hPa	540 - 1100 hPa	+/- 1 hPa	1 minute

Table 2: Parameters list and characteristics.

N	parameter name	short name	unit	sensor type	description of measured parameter (comment)
1	Date/Time	Date/Time			
2	Temperature	Temp	°C	Thermometer	Instant reading
3	Relative Humidity	RH	%	Hygrometer	Instant reading
4	Wind Speed	WI-SP	m/s	Anemometer	Last 10 min average
5	Wind Direction	WI-DD	Sector (360°/16)	Anemometer	Last 10 min prevalent direction of wind
6	High Wind Speed	Hi WI-SP	m/s	Anemometer	Last 10 min maximum instantaneous wind speed (gust)
7	High Wind Direction	Hi WI-DD	Sector (360°/16)	Anemometer	Direction of maximum instantaneous wind speed (gust) during last 10 min
8	Rainfall Amount	RF	mm	Pluviometer	Last 10 min cumulated rainfall amount
9	Rainfall Rate	RR	mm/h	Pluviometer	Last 10 min maximum instantaneous rainfall rate
10	Barometric Pressure	BAR	hPa	Barometer	Last 10 min average atmospheric pressure (adjusted to mean sea level)