

- **Filename:** the name of this file indicates that this PDF contains the documentation information of environmental air data (EAD) captured by a CAPTOR node identified as Node-ID 31, deployed in the Italian testbed in the 2018 campaign.
- **Project information:** CAPTOR project is funded by the European Union's Horizon 2020 Programme under the Grant Agreement No. 688110, www.captor-project.eu
- **Contact of the responsible of the dataset:**
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- **Description of the content of the data set:** the data set contains ozone calibrated data of a captor node located in a reference station during the 2018 summer campaign.
- **Testbed location description:** The testbed was found in the Piemonte-Lombardia-Emilia Romagna-Veneto region, a rural/suburban region in the north of Italy, at the Pianura Padana Valley.
- **Node ID:** 18031
- **Location of the node:** Cuneo (Piemonte)
- **Technical information of the node:** specific information of the node:
 - number and type of sensors in the CAPTOR node: 3 SGX Sensortech MICS 2614 metal-oxide O₃ sensors, 1 Temperature/Relative humidity sensor (DHT1) Grove - Temp&Humi sensor,
 - Information of calibration: the calibration of this node was performed applying a Multiple Linear Regression model to a training and validation set. The model consists of:

$$y \sim b_0 + b_1 x_1 + b_2 x_2 + b_3 x_3$$
 where y is the reference station data, x₁ the values measured by the O₃ sensor, x₂ the values measured by the temperature sensor and x₃ the values measured by the relative humidity sensor.
 The calibration coefficients {b₀,b₁,b₂,b₃} were calculated during a calibration period (20/06-03/07/2018) in the reference station of Cuneo. Additional information on the procedure to calibrate the node can be found in CAPTOR deliverable 2.3. "Software tool for Ozone Concentration Estimation Development",
 - Root Mean Square Error (RMSE) obtained in the calibrated process defined as the square of the Mean Square Error of the testing data set with respect the reference values. RMSE = 8.10 (µg/m³)
 R² (Coefficient of Determination) measures the proportion of variability in Y that can be explained using X and it is bound between 0 and 1. When R² is close to 1 it indicates that a large proportion of the variability in the response has been explained by the regression. R² = 0.85
- **Dates of the campaign:** this node was in a reference station from 20/06/2018 to 09/08/2018
- **Duration of the campaign:** 51 days
- **Length of the data size:** 2429 samples (rows) of the data set
- **Rights:** The results and methods in this dataset are property of the CAPTOR consortium. Any use of the data should be notified and acknowledged to the CAPTOR project.
- **Description of the data set file:** the data set file DataSet_Italy_EAD_Node-ID31_2018.csv contains (columns): Start_local (local date and time at which the sensors started monitoring), End_local (local date and time at which the sensors ended monitoring), and Ozone (averaged ozone concentration in µg/m³); (rows): samples.
- **Additional information (optional):** none