

Session 3: AI and Smart City/Smart Home

## **Assimilation of real-time data from secondary air pollution monitoring networks into air pollution modeling algorithms**

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### **Abstract**

The integration in air quality models of data collected by a secondary air monitoring network of soft-sensors based on low-cost electrochemical sensor readings is challenging. On one hand, the deployment of a dense network of low-cost pollution nodes enables the affordable collection of great amounts of data highly correlated with the real-time local concentration of different air pollutants in wide urban areas. On the other hand, the inherent uncertainty of the inferred concentration by the soft-sensors may be quite large, unstable as well as hard to estimate which leads to a challenging integration in air pollution models.

This talk will be an overview of all the data processing pipeline for air pollution modelling: from the transducers embedded in the sensing nodes to their final presentation to the end-user. Specifically, what one should or should not expect of air pollution measures inferred by soft-sensors in terms of accuracy, uncertainty, drifts, measure stability in different urban environments as well as some current technical limitations that nowadays limit the scalability of the air monitoring technologies.