

## **Meteorology applied to Urban Air Pollution Problems**

Alexander Baklanov  
Danish Meteorological Institute (DMI), Denmark  
E-mail: [alb@dmı.dk](mailto:alb@dmı.dk)

This short lecture course is devoted to basics of meteorological modeling usage in urban air pollution forecasting and practical applications in Europe of the approaches developed. Results of performed and on-going European projects are used for illustration.

Logical structure of the course is based on the following topics:

1. Introduction to European research (COST Actions 710, 715, 728, SARURN/EUROTRAC, CLEAR cluster, ACCENT, etc.)
2. Structure of the urban boundary layer
3. Modification of flow and turbulence structure over urban areas
4. The surface energy balance in urban areas
5. The mixing height and inversions in urban areas
6. Evaluation and analysis of European peak pollution episodes
7. European urban experiments (Copenhagen, ESCOMPTE, BUBBLE, etc.)
8. Preparation of meteorological input data for urban air pollution models
9. Integrated modelling : Forecasting Urban Meteorology, Air Pollution and Population EXposure (FUMAPEX)
10. Summary of achievements, gaps in knowledge, recommendations for further research