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### **O-05. Alexander Mahura: On the importance of urbanization in operational on-line forecasting**

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This study aims to evaluate effects of urbanization in operational on-line forecasting on simulated meteorological operational (as well as climatological patterns) over the urbanized areas and surroundings. As an example, the Copenhagen metropolitan area, Denmark was selected.

The objectives include the following to (i) Modify the existing meteorological models land surface scheme using anthropogenic heat flux and roughness module, building effect parameterization module, and soil model for sub-meso scales urban version module, (ii) Perform simulations of meteorological fields using DMI-HIRLAM (High Resolution Limited Area Model) in two modes (control vs. urban runs), and for two types (case studies and long-term simulations) for selected specific dates reflecting different atmospheric conditions such as low, typical, high winds and high precipitation conditions, (iii) Evaluate effects of urbanization on temporal-spatial structure and variability of meteorological fields by estimation on a diurnal cycle the differences between control and urban runs for meteorological variables (temperature, wind velocity, relative humidity) as well as the net radiation, sensible and storage heat fluxes for different urbanized districts.

It is concluded that long-term operational runs with the high resolution urbanized model showed improvement for the overall model performance, and this improvement is more visible over the urbanized areas such as Copenhagen.

The results can be further applied for improvements in land use classification and climate generation properties, distinguishing and selection of types of urban districts and their properties and urbanization of climate regional and global models.