



Urban SIS – Climate information for European Cities

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Urban SIS is a proof-of-concept project within Copernicus Climate Change (C3S) Service 441 Lot 3, running from 2016 to 2017. The main objective is to facilitate downscaled Essential Climate Variables (ECV) on the urban scale, consisting of hourly data on 1x1 km² spatial resolution. Within the project, data from Pan-European re-analysis and regional climate projections will be downscaled with a Numerical Weather Prediction system. The high-resolution weather data serves to drive air quality and hydrological models with output on the same temporal and spatial resolution, which all together form the basis for user-driven climate impact indicators serving the health and infrastructure sectors.

The project utilizes the Numerical Weather Prediction system HARMONIE for the high-resolution urban simulation. Lateral boundaries are provided by the UERRA/HARMONIE reanalysis that is generated as a preparation for C3S for the historical period. Detailed urban land-use is included through the implementation of the Urban Atlas into the ECOCLIMAP2-dataset which is used by HARMONIE. Surface data assimilation is employed to initialize the surface state in HARMONIE's surface component SURFEX. For UrbanSiS, five to ten year long periods of historical data will be produced for the urban environments of Stockholm, Bologna and Amsterdam-Rotterdam. Uncertainty estimates will also be provided.

This presentation will show preliminary results from the historical period for Stockholm and Bologna. The model data will be validated against local observations. Examples for urban ECVs will be given addressing needs for urban infrastructure, health and water management. The benefit of the high-resolution data will be examined.