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Air Quality Trends in European Pollution Hotspots: Overview of CityZen multi-model hindcasts and projections.

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Understanding air quality distribution and evolution in the major European air pollution hotspots was one of the key objectives of the CityZen FP7 Project. Several initiatives were coordinated in the framework of the project to tackle this issue. The present communication proposes a specific focus on three of them.
An assessment of air quality trends as reported by monitoring networks contributing to the AIRBASE repository was performed. A specific quality checking procedure was developed and applied so that time series statistical analysis could be performed to investigate trends of O_3, NO_2 and PM10 at the regional scale.
In order to investigate the driving processes, a multi-model hindcast was setup, involving 6 modelling groups. The ability of the models to capture the trend reported in the observation-based assessment is discussed for the main regulated compounds. A special focus is devoted to the attribution of air quality variability to meteorological or anthropogenic factors.
The hindcast is complemented by an air quality projection modelling initiative. Using the latest emission projections (from the Global Energy Assessment), the same multi-model ensemble performed multi-annual simulations corresponding to the 2030 decade. The projected air quality situation for several scenarios is discussed, both for raw air pollutant concentration and exposure proxies. Last, a specific discussion is devoted to the co-benefits of climate and air pollution policies.