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A first multi-model assessment of Air Quality trends in Europe.

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We present the final results of the joint modelling exercise that was conducted in the framework of the CityZen project to assess the capability of chemistry transport tools to reproduce observed trends in European air pollution hotspots.
Four regional (BOLCHEM, CHIMERE, EMEP and EURAD) and two global (MOZART and CTM2) chemistry transport models were involved. All of them relied on the same anthropogenic emission data derived from EMEP inventories and simulated the whole 1998-2007 period
Comparisons between models and observations allow concluding on the skill of the models to capture the trends in the background burden (using EMEP stations) and urban pollutions events (using AIRBASE stations). A sensitivity simulation using constant emissions is used to infer the respective role of emission reduction and meteorological variability on the modelled trend of trace species.
Essential conclusions can be drawn from this experiment such as (1) the assessment of the efficiency of air quality management strategies in pollution hotspots or (2) the relevance of implementing these models for projections of future climate / air quality interactions.