

# Modelling of air quality in a changing climate

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## What will be the air quality in Europe in 2050?

Approach: simulation of PM and O<sub>3</sub> using regional chemistry transport model LOTOS-EUROS coupled to regional climate model (RACMO)

Simulations:

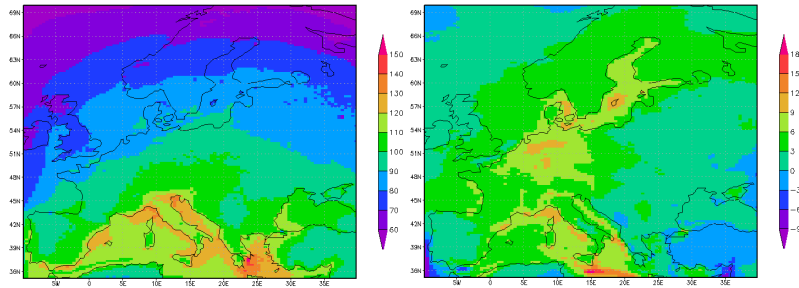
1. LOTOS-EUROS with ECMWF meteorology 2003-2007
2. LOTOS-EUROS with RACMO-ERA-interim meteorology 1989-2009
3. LOTOS-EUROS with RACMO-ECHAM5r3 meteorology 1970-2059

At present: compare simulations for 2003-2007 with observations

- Test functioning of coupled models
- Identify **biases** in modelled meteorology and air quality



*climate run* Summer ozone, 2003-2007 *ERA run-climate run*



System works properly for present-day climate

- Small biases for RACMO with ERA-interim
- Larger biases for RACMO with ECHAM5r
- Biases in LOTOS-EUROS for several species

Outlook

- Quantify biases in detail for 20 years present-day climate
- Interpretation of model simulation for climate around 2050

