

SUPPLEMENTARY MATERIAL

for

Influence of anthropogenic emissions and boundary conditions on multi-model simulations of major air pollutants over Europe and North America in the framework of AQMEII3

Ulas Im¹, Jesper Heile Christensen¹, Camilla Geels¹, Kaj Mantzius Hansen¹, Jørgen Brandt¹, Efisio Solazzo², Ummugulsum Alyuz³, Alessandra Balzarini⁴, Rocio Baro^{5,a}, Roberto Bellasio⁶, Roberto Bianconi⁶, Johannes Bieser⁷, Augustin Colette⁸, Gabriele Curci^{9,10}, Aidan Farrow¹¹, Johannes Flemming¹², Andrea Fraser¹³, Pedro Jimenez-Guerrero⁵, Nutthida Kitwiroon¹⁴, Peng Liu¹⁵, Uarporn Nopmongkol¹⁶, Laura Palacios-Peña⁵, Guido Pirovano⁴, Luca Pozzoli², Marje Prank^{17,18}, Rebecca Rose¹³, Ranjeet Sokhi¹¹, Paolo Tuccella^{9,10}, Alper Unal³, Marta G. Vivanco^{8,18}, Greg Yarwood¹⁶, Christian Hogrefe²⁰, Stefano Galmarini²

¹ Aarhus University, Department of Environmental Science, Frederiksborgvej 399, DK-4000, Roskilde, Denmark.

² European Commission, Joint Research Centre (JRC), Ispra (VA), Italy.

³ Eurasia Institute of Earth Sciences, Istanbul Technical University, Istanbul, Turkey.

⁴ Ricerca sul Sistema Energetico (RSE SpA), Milan, Italy.

⁵ University of Murcia, Department of Physics, Physics of the Earth, Campus de Espinardo, Facultad de Química, 30100 Murcia, Spain.

⁶ Enviroware srl, Concorezzo, MB, Italy.

⁷ Institute of Coastal Research, Chemistry Transport Modelling Group, Helmholtz-Zentrum Geesthacht, Germany.

⁸ INERIS, Institut National de l'Environnement Industriel et des Risques, Parc Alata, 60550 Verneuil-en-Halatte, France.

⁹ Dept. Physical and Chemical Sciences, University of L'Aquila, L'Aquila, Italy.

¹⁰ Center of Excellence CETEMPS, University of L'Aquila, L'Aquila, Italy.

¹¹ Centre for Atmospheric and Instrumentation Research (CAIR), University of Hertfordshire, Hatfield, UK.

¹² European Centre for Medium Range Weather Forecast (ECMWF), Reading, UK.

¹³ Ricardo Energy & Environment, Gemini Building, Fermi Avenue, Harwell, Oxon, OX11 0QR, UK.

¹⁴ Environmental Research Group, Kings' College London, London, UK.

¹⁵ NRC Research Associate at Computational Exposure Division, National Exposure Research Laboratory, Office of Research and Development, United States Environmental Protection Agency, Research Triangle Park, NC, USA

¹⁶ Ramboll Environ, 773 San Marin Drive, Suite 2115, Novato, CA 94998, USA.

¹⁷ Finnish Meteorological Institute, Atmospheric Composition Research Unit, Helsinki, Finland.

¹⁸ Cornell University, Department of Earth and Atmospheric Sciences, Ithaca, USA.

¹⁹ CIEMAT. Avda. Complutense 40., 28040 Madrid, Spain.

²⁰ Computational Exposure Division, National Exposure Research Laboratory, Office of Research and Development, United States Environmental Protection Agency, Research Triangle Park, NC, USA.

^a now at: Section Environmental Meteorology, Division Customer Service, ZAMG e Zentralanstalt für Meteorologie und Geodynamik, 1190 Wien, Austria.

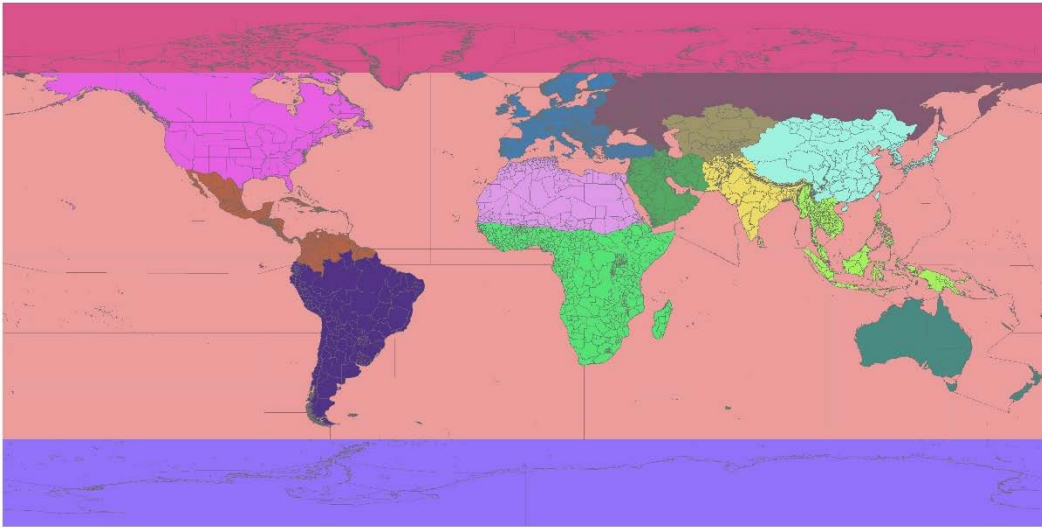


Fig. S1. The HTAP2 regions of source/receptor areas (Taken from Galmarini et al. (2017))

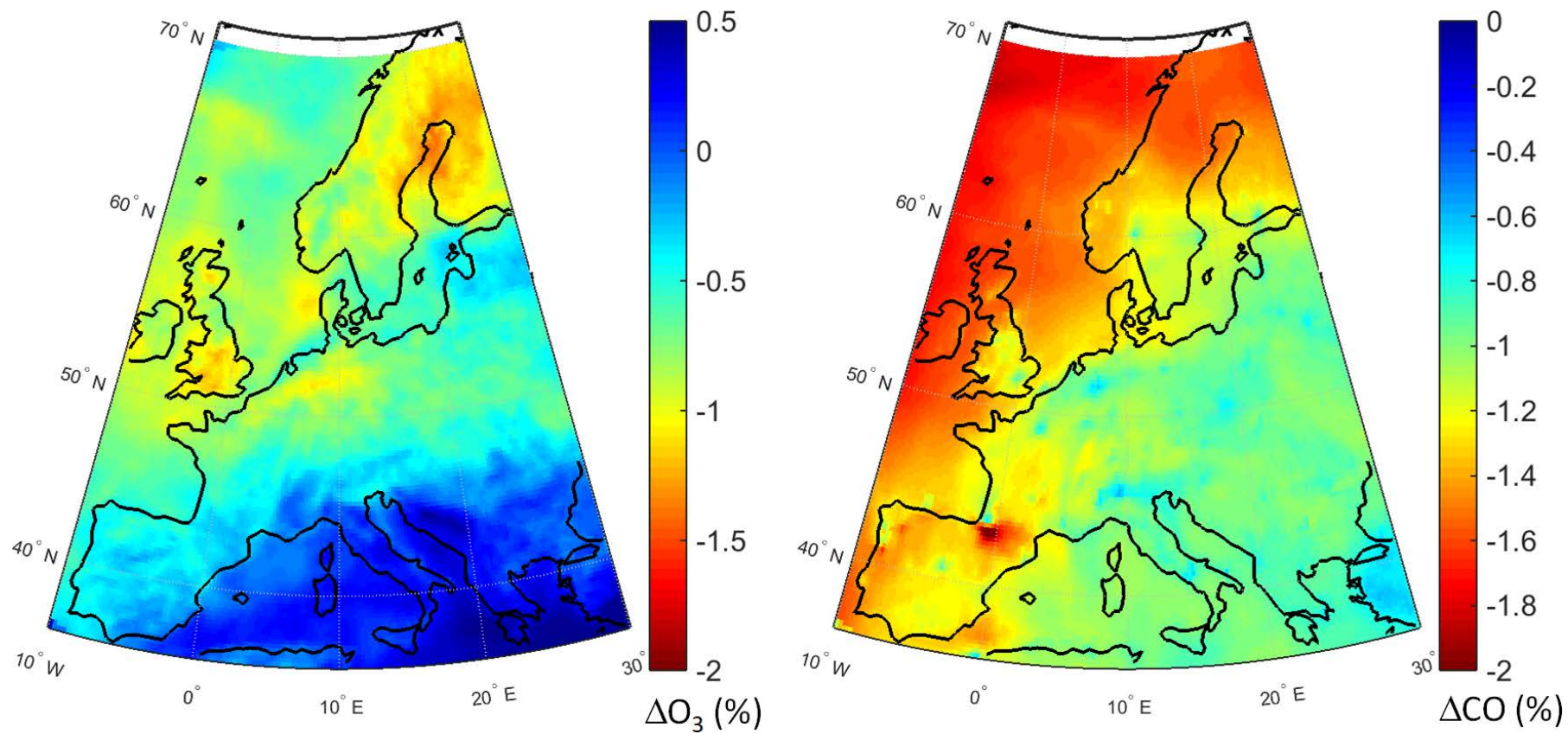


Fig. S2. Response of European springtime O_3 and CO levels to the 20% reduction if the North American anthropogenic emissions (NAM)

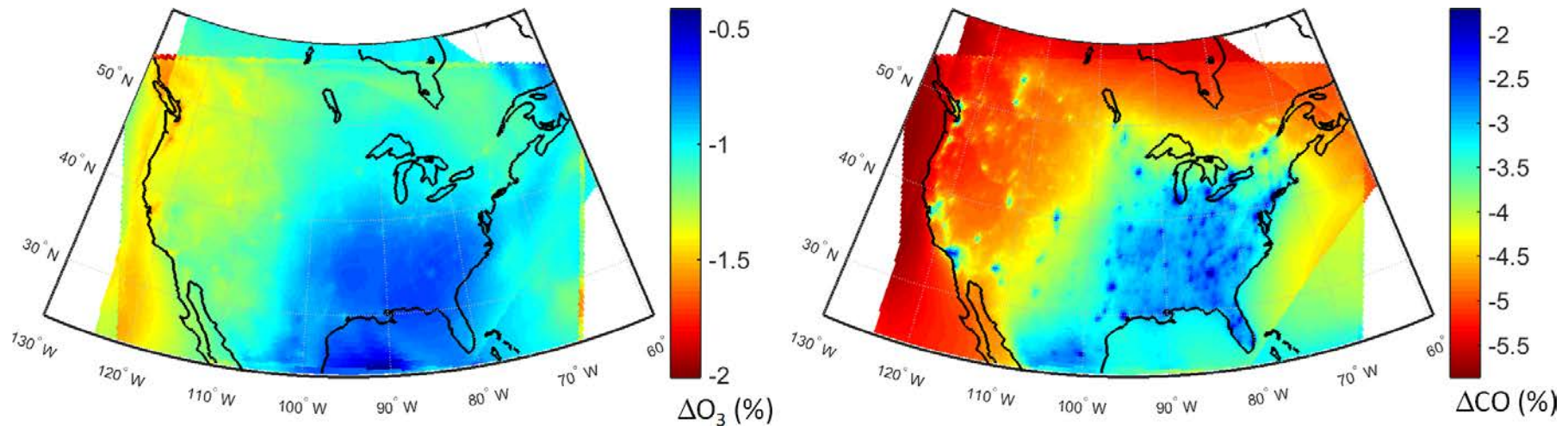


Fig. S3. Response of European springtime O₃ and CO levels to the 20% reduction if the North American anthropogenic emissions (NAM).