Geophysical Research Abstracts
Vol. 18, EGU2016-16227, 2016
EGU General Assembly 2016
© Author(s) 2016. CC Attribution 3.0 License.

GLANCE - calculatinG heaLth impActs of atmospheric pollutioN in a Changing climatE

Leif Vogel (1), Sérgio Faria (1,2), Anil Markandya (1,2)

(1) Basque Centre for Climate Change (BC3), Bilbao, Spain (leif.vogel@bc3research.org), (2) Ikerbasque, Basque Foundation for Science, 48013, Bilbao, Spain

Current annual global estimates of premature deaths from poor air quality are estimated in the range of 2.6-4.4 million, and 2050 projections are expected to double against 2010 levels. In Europe, annual economic burdens are estimated at around 750 bn €. Climate change will further exacerbate air pollution burdens; therefore, a better understanding of the economic impacts on human societies has become an area of intense investigation. European research efforts are being carried out within the MACC project series, which started in 2005. The outcome of this work has been integrated into a European capacity for Earth Observation, the Copernicus Atmospheric Monitoring Service (CAMS). In MACC/CAMS, key pollutant concentrations are computed at the European scale and globally by employing chemically-driven advanced transport models. The project GLANCE (calculatinG heaLth impActs of atmospheric pollutioN in a Changing climatE) aims at developing an integrated assessment model for calculating the health impacts and damage costs of air pollution at different physical scales. It combines MACC/CAMS (assimilated Earth Observations, an ensemble of chemical transport models and state of the art ECWMF weather forecasting) with downscaling based on in-situ network measurements.
The strengthening of modelled projections through integration with empirical evidence reduces errors and uncertainties in the health impact projections and subsequent economic cost assessment. In addition, GLANCE will yield improved data accuracy at different time resolutions. This project is a multidisciplinary approach which brings together expertise from natural sciences and socio economic fields. Here, its general approach will be presented together with first results for the years 2007 - 2012 on the European scale. The results on health impacts and economic burdens are compared to existing assessments.