

Assessment of long-term exposure to air pollution in 37 study areas in Europe using a harmonized approach: the ESCAPE project

Chair:

Tom Bellander, Karolinska Institutet, Sweden

Michael Jerrett, University of California, Berkeley, US

Aim and short description: The ESCAPE project investigates the long-term effects on human health of exposure to air pollution in Europe using health data already available from European cohort studies. A single harmonized exposure assessment protocol has been used to estimate individuals' exposure to traffic-related air pollution in each study area. NO_x and NO₂ concentrations have been measured at 40 sampling locations in each of the 37 included study areas distributed over Europe, and in addition in 20 of these study areas PM₁₀, PM_{2.5} and PM_{2.5} absorbance measurements have been conducted at 20 sampling locations. These filters have also been analyzed for elemental composition using XRF analysis. For all pollutants separate Land Use Regression (LUR) models have been developed using centrally available and locally available GIS data for each area. These developed LUR models are used to assess exposure to air pollution on an individual level for cohort participants in all 37 study areas. This symposium will discuss the results of the measurement and modelling campaigns covering multiple study areas. At the ISEE 2011 conference also study area specific exposure results will be presented in separate (poster) sessions.

Presentations:

1. Variation and land use regression models for PM₁₀, PM_{2.5} and soot concentrations in 19 European study areas
Speaker: Marloes Eeftens, Institute for Risk Assessment Sciences, Utrecht University, The Netherlands
2. Variation of NO₂ and NO_x concentrations and NO₂ and NO_x land use regression (LUR) models in 37 study areas in Europe
Speaker: Matthias Birk, Helmholtz Zentrum München, Germany
3. Variation of elemental composition of particulate matter between and within 20 study areas in Europe
Speaker: Ming-Yi Tsai, Swiss Tropical and Public Health Institute, Switzerland
4. Stability of land use regression models and measured spatial patterns for NO₂, PM_{2.5} and PM_{2.5} absorbance
Speaker: Rob Beelen, Institute for Risk Assessment Sciences, Utrecht University, The Netherlands
5. Comparison of land use regression models with dispersion models in selected European cities
Speaker: Kees de Hoogh, Imperial College London, UK
6. Relationships between air pollution and road traffic noise
Speaker: Wim Swart, National Institute of Public Health, The Netherlands