Uncertainty quantification of Lagrangian dispersion modelling using ECMWF's ERA5 ensemble data within the framework of the ATM Challenge

Andy Delcloo[1] and Pieter De Meutter[1,2]
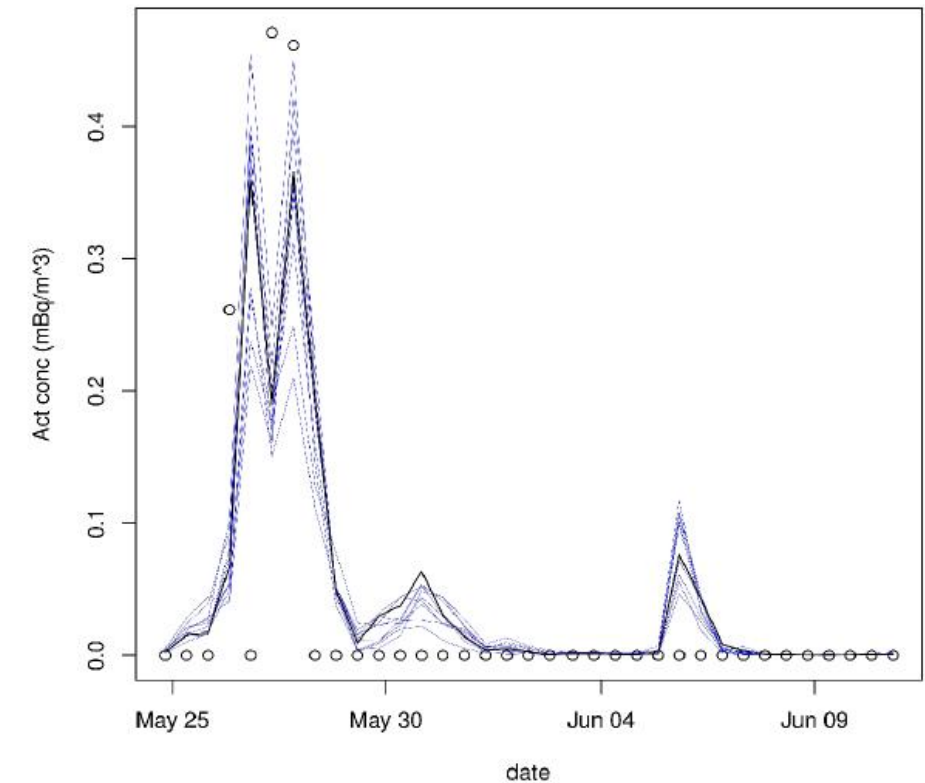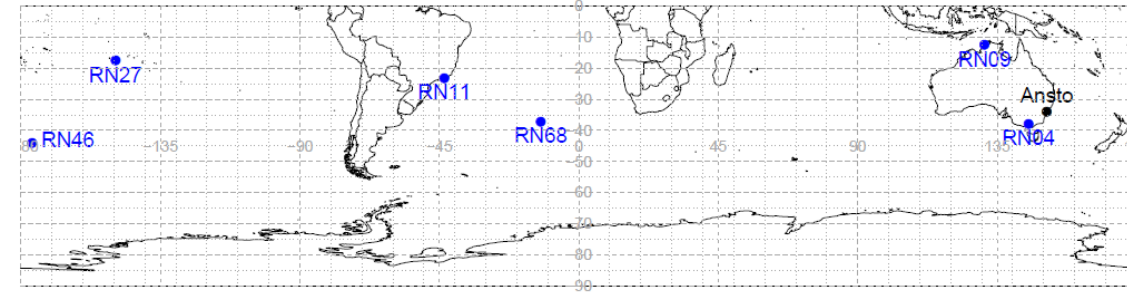[1]Royal Meteorological Institute of Belgium, [2]SCK-CEN, Belgium.

- The second international long-range ATM challenge exercise (Maurer et al., 2018) has been redone, using the new ERA5 dataset from ECMWF. ERA5 is unique compared to previous reanalyses since it consists of 10 members representing the meteorological uncertainty.
- Dispersion model used: FLEXPART
- Radioxenon concentrations at six locations, located in the southern hemisphere, will be calculated during a one-month time period.
- Detailed time-resolved stack emission data from the medical isotope production facility ANSTO, Australia.
  - Time period under consideration: 11 May 2013 until 10 June 2013 for the southern hemisphere.

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