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Influence of Resolution on the Performance of FLEXPART with ECMWF Data in the ATM Challenge 2016

In the context of the Atmospheric Transport Modelling (ATM) Challenge 2016, we simulated the Xe-133 concentrations resulting from emissions by the ANSTO facility in Eastern Australia at various IMS noble gas stations. The stations are located at a wide range of geographical areas, from Australia over the Pacific to South America. All simulations were based on ECMWF 0.125 degree meteorological input data and carried out with FLEXPART in backward mode. Due to the highly different transport distances, suitable sampling grid sizes vary accordingly. We study the impact of the sampling grid resolution in the horizontal and vertical on the quality of results. Standard skill scores usually favour smoother low resolution, smoother model fields, which does not necessarily indicate better simulations. This problem will be addressed as well.

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