



## **Influence of the meteorological spatial resolution on Radon-222 backward modelling with FLEXPART**

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One of the main important origins of uncertainties in atmospheric transport modelling comes from the meteorological input fields. Currently, operational analysis from the ECMWF, one of the reference sources of meteorological inputs used for modelling, are provided with horizontal spatial resolutions from 2 degrees down to 0.2 degrees, and also with different vertical and temporal resolutions.

In this work it has been studied how the increase in spatial resolution of the ECMWF fields would affect the dispersion calculations of Radon-222. Backward modelling has been done with the widely used Lagrangian particle dispersion model FLEXPARTv6.2. Simulated radon concentration time series were compared with measurements at a station located in the outskirts of Barcelona (Spain). Results show relevant differences and better agreement is achieved when using the highest resolution fields. This study shows that if good model performance is desired, it is advisable to use ECMWF with 0.2 deg resolution despite the increase in computational dema