



Influence of meteorological input and wet deposition schemes on atmospheric transport simulations of radionuclides from the Fukushima accident

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Meteorological data used as input to atmospheric transport models are of decisive importance for the resulting transport and deposition patterns. Dispersion calculations for Cs-137 and Xe-133 released by the Fukushima reactor accidents have been carried out with different global and local meteorological information, and results compared. The different meteorological input data sets are global model output from ECMWF with different horizontal resolutions, down to approximately 0.1 degrees, and GFS with 0.5 deg resolution. They were used to drive the Lagrangian particle dispersion model FLEXPART. A new fix for the wet deposition scheme in FLEXPART was tested in these simulations as well. The dispersion calculations have been compared to gridded Cs-137 deposition data and the few available ambient nuclide concentrations measurements within Japan. For the global-scale transport results, CTBTO IMS radionuclide measurements provided the required evaluation data. The influence of nested higher resolution meteorological data from the near-source region on the long range transport and wet scavenging influence was also studied.