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Long-range transport of particulate radionuclides from the Fukushima NPP accident: sensitivity analysis for wet deposition

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Radionuclides from the nuclear accident in the NPP Fukushima in March 2011 were transported across the northern hemisphere within a period of 2-3 weeks. Data from the radionuclide stations of the Comprehensive Nuclear-Test-Ban Treaty Organization (CTBTO) can be used to follow the spread of the plumes for a long time. These "tracers of opportunity" enable the modelling community to validate key model parameterizations, most prominently wet deposition. The validation efforts, however, are impaired by the fact that the release sequence is initially not established. Meanwhile, ongoing scientific work has narrowed down the time period of the release of key species as well as the total release rate. The Meteorological and Geophysical Service of Austria, ZAMG, used the FLEXPART model for near-real-time calculation of the radionuclide dispersion from Fukushima Daiichi from March to May 2011. Based on the estimates for the release sequence meanwhile available, first sensitivity analyses of the FLEXPART model results based on different sets of precipitation data and different washout coefficients are performed.