

P21 Improvement of accuracy of atmospheric dispersion simulation for the Fukushima Daiichi Nuclear Power Station accident using WRF with data assimilation method.

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When radioactive materials are released into the atmosphere due to nuclear accidents, numerical simulations that can reproduce temporal and spatial distribution of radioactive materials are useful to provide the information for radiological dose assessment. However, the uncertainties in meteorological field predictions to simulate the atmospheric dispersion becomes a major problem. In this study, we attempt to improve the accuracy of atmospheric dispersion simulation for the Fukushima Daiichi Nuclear Power Station accident using WRF. The meteorological fields were simulated by WRF with and without four-dimensional data assimilation. This data assimilation was conducted by WRFDA using four-dimensional variational method (4D-Var). Under the meteorological fields of two runs, the dispersion simulations for radioactive materials were examined by the Lagrangian atmospheric dispersion model GEARN developed by Japan Atomic Energy Agency. The GEARN calculations of the surface deposition and air concentration of Cs-137 were compared with measurements. In this presentation, we will demonstrate the improvement of the accuracy of GEARN simulation when the data assimilation method is applied to WRF.