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Abstract

The objective of the NordRisk II project has been to derive practical means for assessing the risks from long-range atmospheric dispersion of radioactive materials. An atlas over different atmospheric dispersion and deposition scenarios has been developed using historical numerical weather prediction (NWP) model data. The NWP model data covers three years spanning the climate variability associated with the North Atlantic Oscillation, and the atlas considers radioactive releases from 16 release sites in and near the Nordic countries. A statistical analysis of the long-range dispersion and deposition patterns is undertaken to quantify the mean dispersion and deposition as well as the variability. Preliminary analyses show that the large-scale atmospheric dispersion and deposition is near-isotropic, irrespective of the release site and detailed climatology, and allows for a simple parameterization of the global dispersion and deposition patterns. The atlas and the underlying data are made available in a format compatible with the ARGOS decision support system, and have been implemented in ARGOS.

Key words risk assessment; long-range transport; radionuclide; pollutants; deposition

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