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Description of radiation conditions and evaluation of the date of ^{137}Cs release to the atmosphere using the radionuclide transfer model coupled with the forecasts by the mesoscale hydrodynamic model

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Abstract

© 2016, Allerton Press, Inc.The estimates of 137Cs emissions from the accident happened in Elektrostal at the beginning of April 12, 2013 are presented. The transport of radionuclides and their dry and wet deposition on the surface are computed using the Lagrangian stochastic model of the NOSTRADAMUS software package worked out by Nuclear Safety Institute of Russian Academy of Sciences. Prognostic fields of wind (horizontal and vertical components) in the lower troposphere, precipitation, and vertical and horizontal turbulence diffusivity coefficients in the lower atmosphere (up to 4 km) were used as input data. Prognostic fields were obtained using the WRF-ARW numerical mesoscale model.

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Keywords

Radionuclide transfer, regional modeling