



Simulation studies of dispersion of air borne radionuclides from a nuclear power plant Paks

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Wide range of dispersion conditions is possible in Center Europe. In case of inadvertent accidental situations, though unlikely, it would be necessary to examine the potentially severe case among different dynamically occurring local atmospheric conditions for dispersion and its range of impact around a nuclear power plant for safety analysis. In this context, dispersion of air borne radioactive effluents during a hypothetical accidental scenario from Paks is simulated using the ECMWF numerical weather prediction model and the particle dispersion model FLEXPART. The influence of dry and wet deposition was examined separately. Model was launched without dry and wet deposition, and the final concentration fields were compared to the normal simulation. The influence of heavy rain was studied, and the concentration and deposition fields were compared to normal simulations as well. An interesting weather situation was selected to demonstrate our results. All the simulations that were performed reveal that the quality of the atmospheric transport model strongly depends on the quality of the driving numerical weather prediction model.