

Application of Computational Fluid Dynamic in the atmospheric dispersion of radionuclides at Fukushima disaster.

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Atmospheric dispersion modeling is used to predict radionuclide concentrations worldwide, modeling is useful to study the impact of an accident or nuclear event on the environment. This kind of simulations provides ways to find better decisions in case of some event may occur, Gaussian model is the most used model but it has some limitations as time scales and wind direction changes, while CFD is a powerful tool to calculate the concentration of particulates including parameters of wind velocity and presence of obstacles. The Fukushima disaster is one of the most significant nuclear incident since Chernobyl, a monitoring network from Comprehensive Nuclear-Test-Ban Treaty Organization (CTBTO) found information about the spread of radioactive particles related to Fukushima accident in more than 35 radionuclide stations. This work aimed to compare the Gaussian model dispersion with Computer Fluid Dynamics (CFD) simulations and some monitory system CTBTO radionuclides data related to Fukushima disaster.

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