

Dr hab. inż. Jarosław Wąs, prof. AGH

Tytuł:

Modeling of oil spill spreading disasters using combination of Lagrangian discrete particle algorithm with Cellular Automata approach

Abstrakt:

The effects of winds, sea currents, evaporation, emulsification, natural dispersion and seashore interaction have been taken into account. A significant advantage of the model is the possibility of taking into account inhomogeneities in space and the instability at the time of the atmospheric conditions. This model enables the determination of the actual state of oil, including its density, composition and viscosity etc, in both a global, as well as a local (in any point of space) meaning. The frame of the model is based on the discrete particle methodology. To improve the spreading process description, Cellular Automata approach is also applied. The results were compared with experimental data and other theoretical outcomes. A high level of accordance is obtained without the necessity of fitting particular parameters.