**A model for radionuclide distribution in the main basins of the Baltic Sea – Conceptual framework (poster)**

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The Baltic Sea is an enclosed arm of the North Atlantic Ocean, characterized by high degree of freshwater input and limited oceanic connection that is reflected in the brackish water type hosting relatively distinct biota communities. The sea is also important in many aspects to the people in the region. The area has also received its share of the global fallout from the nuclear tests and very considerable portion of the Chernobyl fallout and, consequently, the radioactivity concentrations in the seawater, sediments and biota, as well as in river waters discharging to the sea, have been monitored relatively extensively for long. There are also a number of nuclear facilities located on the shores of the Baltic Sea, as well as inland within the catchment area, radioactive materials are transported in ships in the area, and some nuclear-powered vessels may travel the waters. There have been various modelling campaigns for different purposes, as well as general assessments (e.g. the NKS-B EFMARE project and the thematic HELCOM assessments of long-term changes in the radioactivity levels) addressing also the radionuclide transport and its implications in the Baltic Sea. Also, there have been both individual safety assessments and international endeavors (e.g. the PREDO projects) regarding the authorized and possible accidental releases from the nuclear facilities. In addition to these, EnviroCase has now opted to invest in increasing the model diversity through establishing yet another radionuclide transport and dose assessment model of the Baltic Sea so that it is flexible to use for a variety of purposes both in commercial and research-cooperative terms. These include further study of the distribution of the radioactivity across the Baltic Sea main basins and the impacts of various sources (atmospheric and aquatic, point and diffuse sources), also through switching source terms and transport processes on and off and by employing hypothetical what-if scenarios; integrated calculation of doses to the humans and the wildlife on the same basis; provision of radioactivity-flux boundary conditions for models specific for more limited coastal areas of special interest (e.g. near nuclear facilities or addressing secondary contamination of specific shoreline areas more remote from point sources); and performing probabilistic simulations as well as sensitivity and uncertainty analyses in respect of the various endpoints of concern (usually, concentrations in the environmental media and foodstuff and/or doses to people and biota). This poster will present a tentative structure of the model, source terms, exposure pathways and result types, identification of key data sources to populate the model (preferably, and seemingly also mostly, in open access), and the way forward including proposals for collaboration.

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