

EGU2020-22277

<https://doi.org/10.5194/egusphere-egu2020-22277>

EGU General Assembly 2020

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## **Characteristic radiocesium transport in temperature-stratified reservoirs and port-areas: Analysis by using a code, 3D-Sea-SPEC, developed for complex aquatic areas**

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A large amount of radioisotopes of Cesium (Cs) was released into the surrounding environment by the accident of the Fukushima Dai-ichi Nuclear Power Plant (1F) occurred in 2011, and some of them fell into land and sea. Since Cs is an element inside a group of alkali metals, radioisotopes of Cs are strongly sorbed by soil and other particulate matters, especially clay, organic molecules, and polymers. Hence, full understanding of the movement of them in various environmental zones is strongly demanded. In order to reveal such transport processes of radiocesium in aquatic systems, we have so far developed a code, 3D-Sea-SPEC (3D Sea Simulation for Port and its Environmental Coast). The code is composed of CFD based simulation solvers using LES scheme and aimed especially for analysis of complex aquatic zones like reservoirs and port areas. In this presentation, we give an overview of 3D-Sea-SPEC and show the technical improvements in realizing the water temperature stratification commonly seen in reservoirs and port areas under strong sun radiation in summer season. Next, we actually apply the improved code to a typical reservoir and a port area around 1F site, and demonstrate characteristic behaviors of the suspended sediment-sorbed radiocesium.