

## Transport Simulation of Radioactive Sediment around the Mouth of Ukedo River: Numerical Approach by 2-D River Simulation Code

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The Fukushima Daiichi Nuclear Power Plant (FDNPP) accident on March 2011 released significant quantities of radionuclides to the environment. Radioactive cesium isotopes are now the predominant hazards to humans and the environment. Therefore, it is very important to predict the behavior of the cesium for the recovery in Fukushima Prefecture. Since cesium is an alkali metal, it is strongly sorbed by soil particles, especially clays. Moreover, the movement of the soil particles is strongly affected by aquatic systems such as rivers and lakes. Accordingly, when we simulate sediment transport influenced by the aquatic system, we can predict the behavior of the cesium.

In this research, we concentrate on the behavior of sediment around the mouth of Ukedo River. Its upstream was heavily contaminated by the radionuclides released from FDNPP and contaminated soils flow down from the upstream areas during floods. Moreover, since there is a confluence with Takase River in this area, the river flow is complicated. Therefore, we simulated the behavior of sediment with cesium during and after a flood utilizing the 2-dimensional river simulation code Nays2D. We discuss the validity of the simulation results by comparing them with observation data. The results are very useful information for the recovery of the environment in Fukushima.