

## Modeling of Extreme Freshwater Discharge and influence from Japanese First-Class Rivers to Coastal zones

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We estimated the effects of extreme fresh water discharge from Japanese first-class rivers to coastal zones of the Japanese coast. Our targeted event was a typhoon Eta from 06/09/2015 to 12/09/2015, a week, and we could success to optimize 5 parameters, soil roughness coefficient, river roughness coefficient, effective porosity, saturated hydraulic conductivity, and effective rainfall by using Shuffled Complex Evolution method developed by University of Arizona (SCE-UA method), that is one of the optimization method for hydrologic model during this week. In addition to this, we made a set of hourly simulated river outflow data of almost all of Japanese first-class rivers from these basins to the Pacific Ocean and the Sea of Japan during the period by using our model “Cell Distributed Runoff Model Version 3.1.1 (CDRMV3.1.1)”. After the simulation, we used these calculated discharge data with a coupled hydrological-oceanographic model JCOPE-T for estimation of sea surface salinity distribution (SSS) in Japanese coastal zones. And simulated SSS results were verified by comparison with Chlorophyll-a distribution, observed by satellite re-mote sensing. Therefore we successfully reproduced peak discharge prediction of extreme typhoon events on river mouth and the coastal oceanic circulation.