A regional river-ocean seamless model for Kyushu

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A regional river-ocean seamless model is developed for the island of Kyushu, Japan. Extreme rainfalls cause severe flooding and alter the oceanic environment along the coast. In Japan, rainfalls often occur on a regional scale, which includes multiple river basins. The coast is thus affected by river discharges from multiple rivers that differ in magnitude and time variability. This research aims to develop a numerical model to capture this hydrological cycle from land to the ocean seamlessly. We will present model results from a model that focuses on the island of Kyushu and several heavy rain events in the summer of 2015. We find the model to capture the increase and decrease in transport reasonably compared to observations, but with a delay in peak discharge time. The bias in the magnitude of the river discharge differed for each river basins and suggests the need to implement a sophisticated land surface model.

Keywords: River-Ocean coupled model, Hydrological cycle

