ACG05-05 　　　　　Room:211 　　　　　Time:April 30 10:05-10:20

Super high resolution experiments of torrential rainfall events with the K super computer

OIZUMI, Tsutao[1]* ; KURODA, Tohru[1] ; SAITO, Kazuo[2]

[1]Japan Agency for Marine-Earth Science and Technology, [2]Meteorological Research Institute / JAMSTEC

In Japan, localized torrential rainfalls sometimes cause severe disasters which impact on the society. (e.g., the urban flash flood disaster at the Toga-gawa River in Kobe in July 2008, and the debris flow disaster in Izu Ohshima Island in 2013). In these events, the precipitation amountswere very different in the small areas, and they were likely strongly affected by geographical features. In the Kobe event case, about 70 % of the initial flow of the flash flood is from the urban area that covers only about 30 % of the entire catchment area (14 square kilo meters). In the Izu Ohoshima case, two meteorological observation stations are in the northern part and the middle part (near the damaged area) in the island, and the distance between the two stations is only 4 km. However, the quantity of observed precipitation in the middle in island was about twice as much as north.

To understand these phenomena, high resolution (several hundred meter scale resolution) numerical weather simulation is necessary. Super high resolution experiments have been made by previous studies such as tornado for limited domains, however, a numerical weather simulation with wide domain is very few due to limitation of the computational resources. We conduct super high resolution numerical weather experiments for Japan area with the K computer and JMA nonhydrostatic model.

Keywords: Numerical weather prediction model, JMA-NHM, Kei super computer