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The largest tsunami run-up caused by the Tokachi-oki earthquake (September 26, 2003) was observed distant from the source region

YUTAKA HAYASHI[1], YOHEI HASEGAWA[1], KIYOSHI KABATA[2], MASAHIRO IETSUNE[2], HIDEYUKI YAGINUMA[2], KAZUHIRO TANIUCHI[2], TERUO MATSUYAMA[3], MASAKI KOBAYASHI[3] and AKIYASU KAMIKAWA[3]

[1]*Meteorological Research Institute, Japan Meteorological Agency (JMA)*
[2]*Kushiro Local Meteorological Observatory, JMA*
[3]*Sapporo District Meteorological Observatory, JMA*

1. Introduction: Tsunami run-up heights caused by the Tokachi-oki earthquake (epicenter: 41°46.5'N, 144°04.9'N; Mw: 8.0) tended to be higher in the closer area to the epicenter. However, the largest tsunami run-up (4.4 m) was recorded near Akkeshi Bay [1], which is located along the Pacific coast of east Hokkaido and is located more than 100 km northeastward from the east edge of the source region.

2. Field surveys [2]**:** The characteristics of the highest tsunami run-up revealed after interviews and measurements in Akkeshi Town were as follows:

(a) Tsunami run-ups higher than 4 m were observed only within approximately 1 km of the coast of Mabiro colony located outside of the eastern edge of Akkeshi Bay.

(b) The third or fourth uplifting wave was the highest in Mabiro and near by colonies.

(c) The highest run-up in Mabiro was recorded approx. 100 min. after the earthquake.

3. Numerical computing of tsunami [3]: For investigating which part in the source region contributed to high tsunami run-ups near Akkeshi Bay, we assumed 21 small faults of an identical size and slip on the upper surface of the subducting Pacific plate. Then the finite difference computation of the long-wave equations with a 25-75-225-675 m nested grid bathymetry and run-up process was performed for every fault. The distributing pattern of the tsunami near Akkeshi Bay computed for the small fault beneath off Erimo Cape closely resembled the field survey results. This suggests that the asperity off Erimo Cape [4] probably contribute to the largest tsunami run-up recorded distant from the source region of the Tokachi-oki earthquake.

Keywords: 2003 Tokachi-oki earthquake, tsunami run-up height, numerical simulation, Akkeshi Bay, Mabiro

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