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Estimation for tsunami height of 11 March 2011 along the Japan trench, based on the analysis of digital elevation model

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Tsunami damage area maps of 11 March 2011 with scale of 1:25,000 were made by means of interpretation of the aerial photographs taken just after the earthquake by Geospatial Information Authority of Japan (GSI). We estimated distribution of run-up height by combining tsunami damage maps and Digital Elevation Model (DEM) of GSI. Run-up elevation of Sendai and Ishinomaki coastal plain tends to be smaller than that of the Sanriku coast.

Based on the analysis of 2m-mesh DEM derived from scanning airborne lidar system, the run-up maximum elevation reached more than 10m in the southern part of Hamadori district where people are prohibited to enter, because of the accident of the Fukushima nuclear power plant. It is similar value in the northern part of Hamadori district.

Keywords: Tsunami, DEM, 11 March 2011 Tohoku earthquake, aerial photograph