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Volcanic hazard estimation using tephra GIS and geo-spatial information

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It is easy to analyze the relationship between tephra distribution data and other geo-spatial information such as DEM, spatial data infrastructure and Land Condition Map of Volcano, if tephra information is developed for GIS data. Tephra GIS is expected that local governments use for producing the hazard map and estimating environmental effect of volcanic activity. The authors were discussing utilization of the tephra GIS for hazard mapping about active volcanoes in Tohoku District. They were digitized the tephra distribution data about Iwate Volcano and Akita-Komagatake Volcano on Tephra Atlas (Machida and Arai, 2003) and so on, and overlay the tephra distribution and transportation network data of spatial data infrastructure 25000 on GIS. As the results of overlay analysis, highway and national road were located on the east foot of Iwate Volcano were covered by volcanic ashes of Iwate Volcano several times in ten thousands years, and volcanic ashes of Akita-Komagatake Volcano when the caldera of Akita-Komagatake Volcano was formed gave large influence on the wide area near Morioka City.

Keywords: tephra, hazard map, geo-spatial information, Geographic Information System