

Disaster information gathering depend on the geographic characteristics zone using geospatial information

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In order to build a national land equipped with resilience, it is important to advance environmental preservation, land conservation and development which performed geographic division summarized the area where the geographic characteristics is similar. The author tried to classify into the about one hundred geographic characteristics zones of Central Japan for disaster prevention.

Geographic characteristics classification from the viewpoint of the disaster prevention was carried out by the following method. First, it classified into mountain, hill, volcano, plateau and lowland by landform classification. Next, about mountain, hill and volcano, it subdivided according to geology. About plain, it subdivided according to the ratio of plateau and lowland. High-risk areas, such as slope collapse, landslide, liquefaction and collapse of volcanic bodies, were extracted from the analysis of geospatial information, including DEMs, geological maps, landslide distribution maps, landform classification maps, etc.

In this presentation, the author will discuss how to use the geographic characteristics zone for emergency assistance at early stage. It is necessary to consider the disaster information gathering according to the difference of disaster characteristics on each geographic characteristics zone. The most important issue in mountain area is grasping of an isolated colony, and detection of an isolated colony is possible by overlay of slope collapse expected area and road network information. In the viewpoint of a catastrophic secondary disaster, extraction of the flooding area by a landslide dam is very important. Satellite SAR and airborne SAR were effective method in the case of deep collapses by the typhoon heavy rain of Kii Peninsula in 2011. In the disaster information gathering in early stages of a plain area, tsunami damage is very important. Satellite SAR was effective method for the detection and monitoring of the tsunami flooding area in the case of the Great East Japan Earthquake. From the viewpoint which carries out emergency assistance at early stage, the extraction of the heavy damaged area is required. The development of automatic classification technology about spill zone, failure zone and flood zone using polarization SAR is required.

Keywords: geographic characteristics zone, geospatial information, disaster information gathering, emergency assistance at early stage, synthetic aperture radar