A role of free satellite remote sensing data as a case study of heavy rain disaster in July 2018

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A heavy rain disaster occurred mainly in western Japan In July 2018. Immediately after the disaster, various types of aerial photographs and satellite remote sensing (RS) images were taken. In this presentation, I will introduce ground surface analysis using optical and synthetic aperture radar (SAR) in land and inland water around Hiroshima prefecture and their data roles which can be obtained free of charge, especially. It is useful to show the state of landslides and river sediment accumulation clearly by making difference image before and after the disaster using satellite optical sensors data such as LANDSAT-8 and Sentinel-2 with 10 to 30 m resolutions. However since such optical sensors are influenced by the cloud, it is not suitable for rapid damage estimation. Therefore, the difference image analysis similar to the optical sensor using SAR data such as Sentinel-1 was conducted. By this work, in particular, the flooded area was quickly extracted. In the future, we will make these tasks manual, and if any satellite data is downloaded, anyone will make software that can do the same analysis quickly. By regularly conducting data processing courses using such manual and software on local administrative agencies and consultants in construction, we would like to aim at early utilization of RS data in the event of frequent disasters.

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