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The Use of GPS Surveys Method for Natural Hazard Mitigation in Indonesia

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Indonesia is prone to several natural disasters, such as earthquakes, volcanic eruptions, land subsidences, landslides, droughts, floods, and forest fires. At the present times, there are several methods that have been applied for observing and monitoring those hazards. This paper describes and discuss the use of GPS survey method for studying volcano deformation, land subsidence, landslides and geodynamics phenomena in Indonesia, along with their limitations and prospects. The explanation is based on the results and experiences obtained from GPS surveys that have been conducted in several volcanoes (i.e. Guntur, Papandayan, Galunggung, Kelut, Ijen, Bromo and Batur) and land subsidence (i.e. Jakarta and Bandung) and landslide prone areas (i.e. Ciloto and Megamendung) in Indonesia. The previous and ongoing geodynamics studies based on GPS surveys are also described. The paper will be sum up with some closing remarks.