



GPS deformation measurement from the Krakatau volcano (Indonesia)

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Ground deformation due to volcanic magma intrusion is recognised as an important precursor for an eruptive activity of a volcano. The Global Positioning System (GPS) is ideally suited for this application. In 2004, a new multi-parameter monitoring system was installed on the Krakatau island volcano in Indonesia. The system is designed for long-term continuous monitoring of various geophysical and environmental parameters. Installations on the edifice of Anak Krakatau itself consist of three sites in a triangular setting around the volcanic cone. The distances between the stations are less than 1 km. Each site is equipped with a differential GPS receiver, a seismometer and other sensors. The data acquisition centre and a GPS reference station is located 50 km far from the island on Java and receives the data streams via radio links from the Krakatau islands. GPS observation data were processed using the Waypoint Software GrafNav and GravNet version 7.50. This poster presents the entire chain of data acquisition and processing. Further on, first results of a preliminary analysis of the GPS time series are shown. The aim is to develop an automatic procedure, in cooperation with other available online parameters, such as seismic, ground temperature and fumarole gas analysis, to (ev. estimate) appraise the activity status of the Anak Krakatau volcano.