



Comparative evolution of degassing, eruptive activity and seismicity during the 2010 eruption of Merapi

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Mt Merapi (Central Java, Indonesia) is a very active andesitic volcano, with recurrent eruptions every 4 to 6 years, which threatens a highly populated area including the large city of Yogyakarta. Its last eruption in October-November 2010 represents the largest crisis of Merapi over the past century, with an exceptionally high level of released seismic energy, erupted magma volume and emitted sulphur dioxide. Very harsh environmental conditions were met to remotely monitor the degassing of Merapi during the crisis, with frequent strong rainfalls and a high humidity at low altitude accompanying the start of the rainy season, a high content of ash both in the plume but also scattered in the atmosphere around the volcano, and a large evacuated area (20 km radius after 4 Nov) of forbidden access. Despite these difficulties, the combination of diverse techniques of gas and ash monitoring from ground (UV-DOAS spectroscopy) and satellites (using AIRS, OMI and IASI ultra-violet or infrared sensors) proved to be very useful in providing additional information on the eruptive activity and the volumes of magma intruded over the course of the eruption, which helped in the crisis management by CVGHM-BPPTK (Center for Volcanology and Geological Hazard Mitigation). A synthesis of the data covering the whole eruption will be presented mostly focussing on the evolution of Merapi degassing in comparison with its eruptive activity and seismicity.