Geophysical Research Abstracts
Vol. 20, EGU2018-10558, 2018
EGU General Assembly 2018

Monitoring an effusive eruption in Iceland with seismic recordings

Eva P. S. Eibl (1,2,3), Christopher J. Bean (1), Ingibjörg Jonsdottir (4), Armann Höskuldsson (4), Thorvaldur Thordarson (4), Diego Coppola (5), Tanja Witt (3), and Thomas R. Walter (3)

(1) School of Cosmic Physics, Dublin Institute for Advanced Studies, 5 Merrion Square, Dublin 2, Ireland (eva.ps.eibl@hotmail.com), (2) School of Earth Sciences, University College Dublin, Dublin 4, Ireland, (3) now at: GFZ - German Research Center for Geosciences, Potsdam, Germany, (4) Institute of Earth Sciences, University of Iceland, Askja, Building of Natural Sciences, Sturlugata 7, 101 Reykjavík, Iceland, (5) Università di Torino, Dipartimento di Scienze della Terra, Turin, Italy

Monitoring the growth of a lava flow field is of interest in densely populated areas where flows threaten roads, houses, other infrastructure and life. Monitoring usually relies on satellite data, ground-based GPS data and modelling of lava flows although they are also accompanied by seismic signals. We demonstrate that during an effusive eruption in 2014/15 in Iceland at Holuhraun, seismic tremor signals could be used to monitor the growth of a lava flow field. This conclusion was obtained through a combination of seismic data, GPS data and satellite data. Using seismic data in the monitoring allows a high-time resolution, can be processed in near real-time, can be performed remotely once the instruments are installed and is non-invasive. These data will therefore help to improve the monitoring of effusive eruptions.