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## A volcano seismic monitoring network in the Caribbean Netherlands

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The Lesser Antilles volcanic arc on the eastern boundary of the Caribbean Plate is part of the Caribbean subduction zone. The subduction process is responsible for the formation of 16 volcanoes in this arc, forming islands like Saba and St. Eustatius in the Caribbean Netherlands. KNMI deploys a monitoring network on these islands consisting of seismometers and GNSS stations. The seismic network is built with broadband seismometers to monitor seismic signals from (regional) earthquakes and from volcano related processes at Saba and St. Eustatius. We use local infrastructure as well as stand-alone VSAT technology to transmit seismic data in near real-time to KNMI. Data are forwarded in real-time to the Pacific Tsunami Warning Center (PWTC). Waveforms are openly available to the research community through ORFEUS/EIDA, and through EPOS-NL, a Dutch national research infrastructure for solid Earth science that integrates large-scale geophysical facilities in the Netherlands.

Volcanoes Mt. Scenery (Saba) and The Quill (St. Eustatius) are active but quiescent. Volcanic earthquakes may occur at different depths and are caused by various processes in a volcano. Each type of volcanic earthquake exposes differences in features in the waveform data, like frequency content, waveform envelope, duration, statistical parameters and type of onset. We are building a monitoring system based on various tools and techniques, like a) SeisComP3 for detecting and locating regional tectonic earthquakes, b) a coincidence trigger to detect small, local (volcanic) earthquakes, c) covariance matrix analysis to identify coherent signals across the network, d) seismic interferometry to monitor seismic velocity changes in the subsurface of the volcanoes and e) data quality monitoring to ensure high quality of data.

We provide an overview of the seismic network, the infrastructure, the availability of data through EPOS-NL and the implementation of the various monitoring techniques.