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POSTER PRESENTATION

Applications of Short-Period Seismic Nodes for Earthquake and Tectonic Studies

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Seismic nodes are compact, self-contained sensors that offer versatile and rapid deployment. Despite being extensively used in industry, nodes are seldom used in the academic community, partly due to their perceived poor recordings of low frequencies. Here we show that after removing the instrument response, seismic nodes are comparable to broadband instruments, and have many applications in earthquake and tectonic studies, including:

a) Rapid deployment following earthquakes and volcanic eruptions to record aftershocks,

b) Dense seismic surveys for imaging and microseismicity detection.

We will discuss examples of using nodes to record aftershocks, including on Lombok in August 2018 and in Palu in September 2018. The small size and ease of use meant nodes were deployed swiftly in both cases, recording rich datasets which reveal the fault geometry.

Nodes are also ideal in urban environments, as they can be deployed in any configuration and have a small footprint. We will discuss the first passive seismic survey of Singapore, with acquisition planned in the first half of 2019, using a network of nodes placed at locations across the island including schools and parks. The survey aims to scientifically assess the 3D geological structure, seismic hazard and geothermal potential of Singapore.