



## **Quantifying detection capability of a regional infrasound network using a combination of film sound techniques and array processing**

Anna Perttu (1), Benoit Taisne (1,2), Ross Williams (3), and Dorianne Tailpied (1)

(1) Earth Observatory of Singapore, Nanyang Technological University, Singapore , (2) Asian School of the environment, Nanyang Technological University, Singapore , (3) School of Art Design and Media, Nanyang Technological University, Singapore

While there are over 900 volcanoes that have the potential to impact ASEAN airspace, SE Asia has a high percentage of cloud cover, making satellite based remote sensing techniques less reliable than in other regions. Infrasound is a cloud cover independent technology, and volcanic activity from SE Asia has been recorded globally by the International Monitoring System (IMS). An event database was compiled, using the weekly reports and bulletins from the Global Volcanism Program (GVP), of volcanic plumes reported between 2014 to mid-2017 in SE Asia. Of these, the infrasound signals of the 10 largest plumes were processed on the regional infrasound network to quantify actual vs. theoretical detection rate. Far fewer events were detected in initial processing than originally expected using standard infrasound techniques. In collaboration with a sound designer/composer, film audio post production techniques were applied to the raw infrasound data, then the array processing was redone to determine if the detection capability could be improved.