

4 May 2022, Palmerston North

PhD position at Massey University, New Zealand

Hydrothermal alteration mapping at Whaakari/White and Tuhua/Mayor Islands –

Massey University, New Zealand, is seeking a highly motivated PhD candidate for a 3-year research project in assessing hydrothermal alteration using geophysical methods. The PhD opportunity is funded through the Beneath the Waves: Preparedness and resilience to New Zealand's nearshore volcano hazards (MBIE Endeavour Research Programme led by GNS Science).

Volcanic islands represent multiple hazards including geophysical mass flows, ashfall, tsunamis, capable of causing massive destruction even at tens of kilometres far from its source. Both mass flows and associated tsunamis can be triggered by volcanic landslides which is increasingly common on volcanoes with hydrothermal alteration. Hydrothermal alteration can also compromise the mechanical properties of the volcanic edifice, via dissolution and precipitation of new secondary minerals. Mapping hydrothermal alteration and mineralogy is a key information to assess volcanic hazards and formulate mitigation strategies.

This project utilizes lab-based and airborne hyperspectral remote sensing to characterise surface alteration on Whaakari/White Island and Tuhua/Mayor Islands, offshore from New Zealand. The remote sensing data will be complemented with Digital Terrain Analysis using photogrammetry- and LiDAR-derived DTMs and microanalytical techniques, such as SEM and XRD, to fingerprint alteration mineralogy, as well as other geophysical methods (e.g. gravity and magnetic data).

The candidate is expected to hold an MSc or BSc (Honours) degree or equivalent in Geophysics/Remote Sensing/Earth Science/ or any related fields. English language requirements are: Academic IELTS score of 6.5 with no band less than 6.0 - this must be achieved in one sitting, or a minimum TOEFL iBT of 90 overall (minimum of 20 in writing). More information can be found at this page: <https://www.massey.ac.nz/massey/research/higher-research-degrees/how-to-apply-for-the-phd/how-to-apply-for-the-phd.cfm>

The scholarship includes a 30,000 NZD stipend (tax-free) and covers tuition fees, insurance, and a conference/research allowance. The successful candidate will join the Volcanic Risk Solutions group within the School of Agriculture and Environment, Massey University. The start date is negotiable.

Candidates are encouraged to get in touch with Dr Gabor Kereszturi (G.Kereszturi@massey.ac.nz). The position does not have a closing date; applications will be reviewed until the position is filled.

Massey University

Te Kunenga ki Pūrehuroa

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