



Microearthquakes within the “Locked Zone” offshore the Wellington Region

Level: MSc or PhD

Summary: Use ocean bottom seismometer data to locate small earthquakes in a region that is considered to be “locked”, which might burst in a large, destructive earthquake.

Background Information of Project:

The subduction interface below and offshore the Wellington region is currently “locked”, building up stress that will be released in a large, destructive subduction thrust earthquake. Unfortunately, the GeoNet network is effectively blind to small earthquakes offshore, and even large earthquakes are not well located, hindering understanding of the hazard posed by the offshore subduction zone. We are working with colleagues at GNS Science and in Canada. We deployed 20 ocean bottom seismometers (OBS) offshore Wellington at the Hikurangi Subduction Zone in November 2023 and will pick them up in January 2025. The student may be able to assist in the retrieval of the instruments and will use the data to detect and locate small earthquakes there, which will ultimately feed into improved seismic and tsunami hazard estimates.

Position available: MSc or PhD

Skills Involved/Required:

- General knowledge of earth science including geophysics, and some computer skills.
- Applicants should have completed a BSc (Hons), PGDip, or four-year undergraduate science degree in physics, mathematics, geophysics, geology, data science, or a related field and will ideally have had some prior research experience.
- PhD applicants should have completed an MSc degree.
- The project is funded by the Natural Hazards Commission Toka Tū Ake, and some funding is available for a research assistant. But we recommend you also apply for an MSc or PhD scholarship. Please discuss with us well before the November 1 scholarship deadline application.

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