

Thornton Lab

[Ocean Perception and Interaction]

RESQ hose:
Measurement of seafloor
radioactivity off Fukushima

Underwater Technology Collaborative Research Center
<http://ocean.iis.u-tokyo.ac.jp>

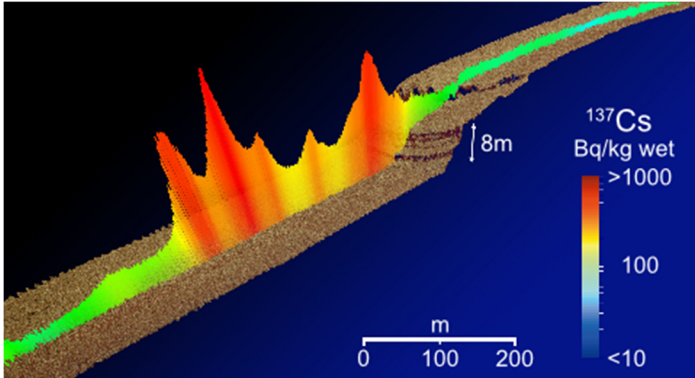


Seeing our ocean through new eyes

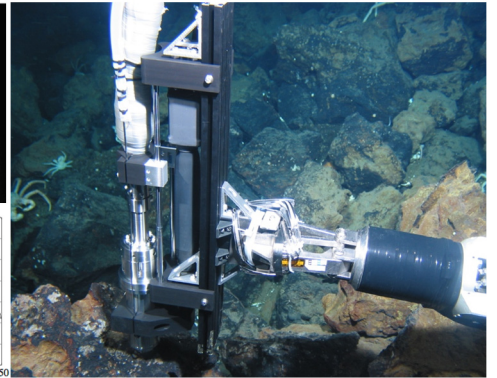
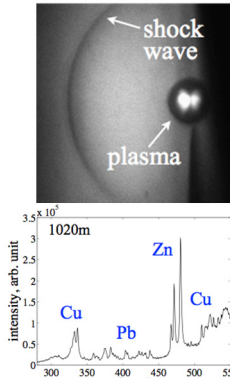
Not in seeking new landscapes but in having new eyes
~ Marcel Proust

Underwater sensing is the raw material of how we perceive the ocean. By investigating fundamental physical mechanisms, we aim to expand and enrich the tool set of techniques available for in situ measurements at sea. Our application fields include:

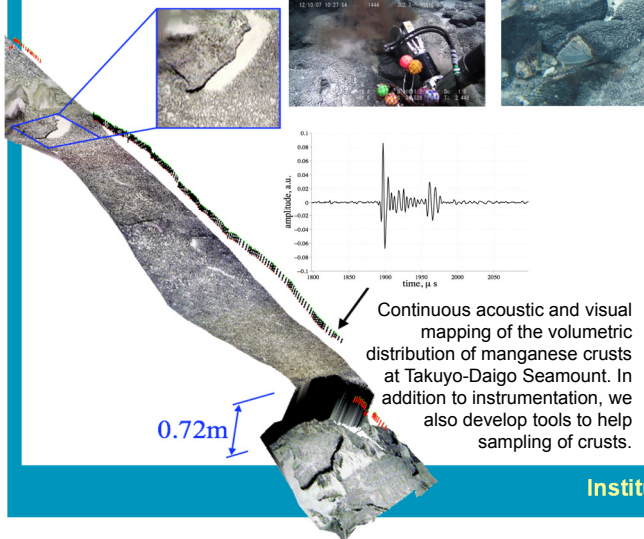
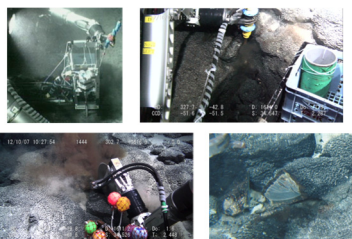
- ◆ In situ measurement of seafloor radioactivity
- ◆ Laser-induced plasmas for in situ multi-element chemical analysis on the seafloor
- ◆ High altitude 3D visual mapping for wide-area benthic habitat surveys
- ◆ Acoustic and 3D visual mapping of the volumetric distribution of manganese crusts



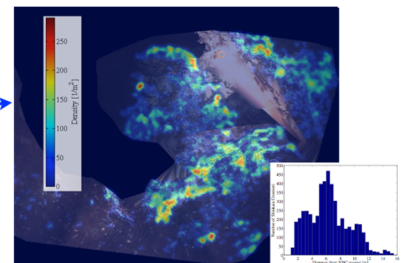
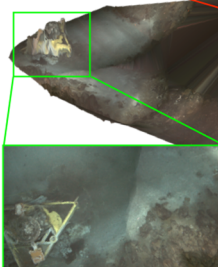
Over 1600km of continuous seafloor radioactivity measurements using a towed gamma-ray spectrometer.



Application of laser-induced plasmas for in situ chemical analysis of deep-sea mineral deposits.



Continuous acoustic and visual mapping of the volumetric distribution of manganese crusts at Takuyo-Daigo Seamount. In addition to instrumentation, we also develop tools to help sampling of crusts.



3D reconstruction of sulfide deposits at over 1000m depth. The bottom left shows an artificial vent installed by JAMSTEC. The top right shows the population distribution of *Shinkaia crosnieri* (size 3~5cm) inhabiting the area.