

## Geophysical features of the north Izu-Ogasawara region

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During two-year R/Vs Kaiyo, kairei, and Natsushima surveys, we special focused on geophysical features of morphology, crustal structure, gravity and magnetics bounded by latitude, longitude: N30 - 33, E138 - 141, in the north Izu-Ogasawara region, which include frontal volcanoes (Sumisu caldera and Torishima volcano) and back-arc seamounts (Horeki and Genroku seamounts). Swath bathymetric surveys were conducted along box type tracks with totally 2,000 miles long. According to the single channel seismic (SCS) records obtained by the R/V Kairei KR02-16 and KR04-04 cruises, we designed to deploy Multi-channel Seismic (MCS) system as overwrap and across lines; a set of GI\_GUN and streamer cables as parallel, subparallel or crisscross tied SCS track lines around frontal volcanoes and back-arc seamounts.

We operated gravity and magnetic surveys on the same line of swath bathymetry. Along the back-arc seamount chains and around the Sumisu and Torishima caldera regions, negative Bouguer gravity anomalies are obtained. Positive magnetization values are obtained on the Sumisu and Torishima calderas by Parker's inverted method. We performed a rockmagnetic measurements and chemical composition measurements on the rock samples by dredges and the Hyper Dolphine. I will review our recent studies obtained so far in the Izu-Bonin arc.