

## Mapping of small-scale seamounts off Southern Chile

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A bathymetry, gravity, and magnetic survey off southern Chile during the R/V Mirai cruise in 2017 provided new information about this area where had been sparsely surveyed. We will present results of newly mapped seamounts on the Antarctic Plate. The seamounts had summit caldera, thus the seamounts were presumed to originate from submarine volcanoes origins. The largest seamount was located at 51°00'S, 79°25'W. The seamount had a major axis of about 17 km, a minor axis of 10 km, and the strike of the major axis is N45°W. The water depth of the base of the seamount is about 3900 m and the summit depth was about 2900 m, thus the relative height was about 1000 m. The seamount was surrounded by a moat with the maximum deep of 100 m. The basal area was about 160 km<sup>2</sup> and the volume above the seafloor was about 70 km<sup>3</sup>. The depth and the diameter of the caldera were 200 m and 2.5 km, respectively. We observed free-air gravity anomaly of about +20 mGal at the base of the seamount, and of about +50 mGal over the top of the seamount, thus the peak-to-trough amplitude of the gravity anomaly produced by the seamount was 30 mGal. Our gravity modeling suggested that the seamount mostly consisted of dense basaltic rocks and had been emplaced on lithosphere with elastic thickness. Therefore, the seamount was supposed to erupt near the mid-ocean ridge. The southeastern half of seamount was magnetized in positive direction. On the other hand, for the northwestern half, the magnetization was uncertain because there was no ship track coverage over the portion. We observed magnetic total force and also vector anomaly with amplitudes of about 400 nT. Magnetic Anomaly 5C to 6A (Crustal ages: ~16-21 Ma) of the magnetic lineation were identified along our transit tracks in the vicinity of the seamounts. These identifications are consistent with magnetic isochrons reported from previous studies.