

## Surface geophysical survey of Suiyo Seamount in the Izu-Bonin arc

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Surface geophysical data of the Suiyo Seamount area (600 km<sup>2</sup> area totally) in the Izu-Bonin arc, were collected during R/V Kairei cruise (KR01-15) in December 2001 to characterize present features of Suiyo Seamount, which could indicate a trace of its formation history. We derived bathymetry and backscatter image from the SeaBeam2112 data. The results indicate 1) E-W trend of bathymetric high including Suiyo Seamount probably due to volcanic activity, 2) N-S trend of graben structure suggesting E-W extension, 3) low backscatter image of Suiyo Seamount except the NNE side, and 4) higher backscatter image of the mountain adjacent to Suiyo Seamount in the west. Crustal magnetization is inverted from the total intensity of the magnetic anomaly field. We used the three-dimensional Fourier inversion approach of Parker and Huestis (1974), which also takes into account the effect of bathymetry. The main assumptions of the inversion method are 1) that magnetization is constant with depth and varies only in the horizontal dimension, 2) magnetization direction is fixed in the direction of the geocentric axial dipole, and 3) the source region is a magnetized layer of constant thickness (1 km for this study) whose upper boundary is defined by the bathymetry. The magnetization solution shows 1) normal magnetization of Suiyo Seamount with low magnetization on the summit, and 2) reversal magnetization of the mountain adjacent to Suiyo Seamount in the west. Different magnetization direction between the mountains indicates different formation age of the mountains. Further, low magnetization on the summit of Suiyo Seamount could be related to hydrothermal activity in the caldera through the process of rock alteration. We will present interpretation of these features through the detail analyses of bathymetry, backscatter image, magnetization results.