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Topographic survey of lake-bottom of Ashi-no-ko in the Hakone Volcano using the narrow multi-beam sonar system

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Hakone-machi active fault, one of the A.D. 1930 Kita-Izu earthquake fault system, runs along the southeastern part of lake Ashi-no-ko in the Hakone volcano, corresponding to the western margin of the Maizuru micro-plate. Strike-slip motion of the fault system is considered to have caused the caldera and central cone formation of the volcano. The fault probably passes through between Byoubu-yama and Do-ga-shima, and extends to the lake-bottom of Ashi-no-ko, where rise-like morphologic features with several terraces are developed. Such lake-bottom surface forms may show tectonic activities of the Hakone-machi fault. Topographic survey of lake-bottom of Ashi-no-ko, using the SeaBat 8101 narrow multi-beam sonar system, clarifies such morphologic features as swell, hollow, scarp, hummock, and terrace. Those features tend to be arranged in the direction of northwest and southeast, and in particular the scarp parallel to the Hakone-machi active fault is tectonically noted, because the fault running along the east side of lake Ashi-no-ko may correspond to one of north extension spray faults of the Kita-Izu active fault system.

Keywords: Hakone volcano, Hakonemachi fault, SeaBat 8101 narrow multi-beam sonar system, lake Ashi-no-ko