

Erosional features of Soma Slope Channel, off Miyagi, Japan

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Located at the boundary between Pacific Plate and North America Plate, Tohoku (NE Japan) is the forearc slope of the active subduction zone, featuring as a tectonically active margin. In the central part off Tohoku, the bathymetric data off Miyagi show that there is a channel (Soma Slope Channel) connecting shallow marine (< 500 m) and slope terrace (>1000 m). The reflection seismic data across the Soma Slope Channel show more than 10 U-shaped and V-shaped reflectors, suggesting that channelized features and filling of the channels. Besides, the channel-shaped reflectors became shallower toward north, suggesting a series of northward migration of the Soma Slope Channel. The reflection seismic data along the axis of the Soma Slope Channel show a several regional erosional surfaces and could be regarded as stratigraphic sequences boundaries. The ages of these stratigraphic sequences boundaries derived from exploration well (MITI Soma-oki) indicates that this slope channel system is likely to develop during Pliocene-Pleistocene. It seems that the Pliocene-Pleistocene sequence are thick and the Miocene-age strata are generally deep south of the Soma Slope Channel, while Pliocene-Pleistocene sequence are thinner and the Miocene-age strata are shallower north of the Soma Slope Channel. Whether the Soma Slope Channel is structural-dominated or sedimentary-dominated as well as the mechanism of channel migration will be discussed in this study.

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