Topography and geology of the submarine landslide deposit by sector collapse of Oshima-Oshima island in the northern part of japan

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Oshima-Oshima island is an active volcano located in the eastern margin of the Japan Sea off Hokkaido. The latest eruption occurred at the 18th century. In a huge eruption on August 1741 , Nishiyama of western part of Oshima-Oshima collapsed toward the northern submarine slope , and the horseshoe shape caldera was formed. It is proposed by Katsui et al.(1977) , Satake and Kato(2001) that Japan Sea tsunami in 1741 was generated by this collapse. Detailed swath bathymetry surveys have been conducted around Oshima-Oshima by Hydrographic and Oceanographic Department of Japan in 1993. As a result, a large area of debris avalanche deposits has been discovered on the northern submarine flanks of Oshima-Oshima island. In addition, sidescan sonar surveys was also conducted by Hydrographic and Oceanographic Department of Japan and University of Tokyo in 1995. In 1997, the lower part of the debris avalanche deposit was investigated using submersible *Shinkai 2000* by JAMSTEC(Japan Agency for Marine-Earth Science and Technology). It was confirmed that those deposits were Oshima origins (Kato,1997). We compiled and analyzed using these detailed bathymetry data and sidescan data. As a result , we clarified a detailed geographical features of debris avalanche and the limit of their distribution. Scarp of caldera rim continues to approximately 1000m under the sea. Oshima-Oshima has diameter of approximately 20km. Oshima-Oshima has also an estimated total edifice volume (subaerial and submarine) of 114km^3 and rises about 2100m from its base in 1400m depth of water. Northern part of Oshima-Oshima, the scarp of caldera rim on the subaerial area consecutively continues up to about 1000m of depth. The scarp has 100m-300m high , and width of landslide valley is about 2km. Hammocky surface starts from 1000m depth of water. Sea mount of like spur is composed of the collapse deposits has almost extended to the whole area in the trough deeper than 1000m. Debris avalanche deposits have been identified up to 2000m depth and 18km from Oshima-Oshima island. Maximum sizes of debris avalanche block is up to 2km width and 100m high.