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Characteristics of submarine landslides in convergent margins and its natural disasters

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Submarine landslide is a natural phenomena that is closely related to human society, because it is highly probability to occur tsunami and to damage coastal and seafloor constructions.
There are several study examples of relationship between tsunamis and submarine landslides. In Aleutian area, large earthquake of Ms = 7.1 occurred on 1st April, 1946, and 167 people living in coastal area were killed by giant tsunami of Mt = 9.3 (Fryer et al., 2004). They suggested that this tsunami was induced by submarine landslide (Ugamak slide) distributing landward slope of about 200 m in water depth. Such studies have done at Nicoya slump in Costarica. von huene et al. (2004) studied in this area, and they found giant submarine landslide of 50 km in width which is associated with seamount subduction. They suggested that tsunami of 27 m in height occurred by the submarine landslide. These study examples indicate that tsunamis associated with submarine landsliding attack to Japan.
A relationship between submarine landslides and constructions has been studied for long time. Heezen and Ewing (1952) clarified that submarine cables are cut by submarine landslides and related turbidity currents. This suggests that the submarine landslides can not ignore even if those size are small around Japan. Recently, submarine cables were cut probably by submarine landslides and related turbidity currents in Taiwan, and social and economic systems in Taiwan were in trouble by the accident. In 26 December 2006, earthquake of M7.1 hit Taiwan, and submarine landslides occurred by the earthquake cut submarine cable successively. In 12 August 2009, six submarine cables were cut by probably such submarine landslides. Such accidents may occur in Japan.
Furthermore, submarine landslides are closely related to marine resource development around Japan, particularly methane hydrate in the Nankai trough. When we exploit methane hydrate, we have to evaluate submarine landslides.
In this presentation, I overlook submarine landslide studies all around the world, and discuss how we study about submarine landslides in convergent margins as Japanese Island.

Keywords: Tsunami, Submarine cable, Turbidity current, Earthquake, Methane hydrate, Subduction zone