

Submarine slides and marine geohazards: the previous study results and current problems

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In this paper, I review the general characteristics of submarine slides, and their trigger mechanisms in short- and long-terms and marine geohazards due to the submarine slides. Submarine slides have been reported in various sedimentary environments, such as 1) fjords, 2) active river deltas on the continental margin, 3) submarine canyon – fan system, 4) open continental slopes, 5) oceanic volcanic islands and ridges, 6) glacially-influenced continental margins, and 7) continental slopes with active faults.

Furthermore, I introduce the trigger mechanism of the submarine slides. It would more likely be related to the consequence of earthquakes, such as an abrupt increase in ground acceleration and increased pore fluid pressure. The precondition includes many factors, such as gradual increase in pore pressure by decomposition of methane hydrate due to climate change, increase in pore pressure by high sedimentation rate, ground deformation due to subduction/collision of seamounts, and/or slope steepening due to volcanic activities.