



## **Climate preconditioning on submarine landslides at IODP site C0018 (Nankai Trough)**

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Submarine landslides are major agents in sediment-mass transfer from shallow to deep sea. Due to their rapid emplacement and tsunamigenic potential, they pose significant geohazards for society and to off- and on-shore infrastructures. Dating of the respective deposits, often referred to as mass-transport deposits (MTDs), remains an important step in order to study the frequency of such large MTDs and to better understand their trigger mechanism and preconditioning factors. Although MTDs can be imaged by seismic surveys, characterization and dating of their deposits, which are mostly buried deeper than what can be reached by standard coring techniques from conventional research vessels, require scientific ocean drilling.

The aim of this study is to reconstruct the timing of large MTDs at site C0018 (IODP Exp. 333) within a slope-basin in the outer fore arc of the Nankai subduction zone, off the coast of SW Japan. Although, this margin is characterized by magnitude 8+ earthquake occurring every 150 years, only six large landslide deposits are identified in the sediment record spanning nearly 1 Million years. This suggests that long term processes other than short-term earthquake trigger mechanism must precondition the slope for infrequent failure. In this study, the existing age model of C0018 has been refined with new tephra ages and oxygen isotope stratigraphy on planctonic foraminiferas. Following this new data set, the MTDs at C0018 seem to occur during warm phases of interglacials suggesting that climate act as preconditioning factor of submarine slope instabilities in this tectonic active region.