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Regional variation of decollement reflection along the Nankai subduction zone

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Abstract

Understanding of the structure and physical properties of the decollement, which is a plate boundary fault in a subduction zone, is important to elucidate a mechanism of megathrust earthquake generation in southwest Japan. In this study, we interpreted multichannel seismic reflection profiles that have been acquired in the Nankai subduction zone by Japan Agency for Marine-Earth Science and Technology (JAMSTEC) since the 1990's.

We paid attention to three features of the decollement reflection: spational distribution, polarity, and reflectivity. We separated the Nankai subduction zone into "stable sliding" and "stick slip" zones by checking location of the decollement step-down to the top of oceanic crust. According to the reflection polarity (i.e., normal or reverse) of the decollement, we divided the Nankai subduction zone into several different regions. We tried to estimate reflection coefficient of the decollement to examine a regional variation of physical properties along the Nankai decollement. In this talk, we will present preliminary results of the decollement reflection study, and discuss its implications for subduction processes in the Nankai Trough margin.