Block slider model in subduction zone

Arito Sakaguchi[1]

[1] JAMSTEC

http://www.arito.jp

The seismogenic system in subduction zone is consist of the plastic deformed creep zone at deep depth portion, consolidated rock of lock zone at middle depth portion and soft sediment deformed creep portion at shallow depth portions. A physical model of block slider model in subduction zone is considered by analogue experiment. The experiment model is consist with five blocks, spring, plate and backstops. The blocks are arranged as like as train and jointed by spring each other. The interface between car and plate have smooth sheet except the car at middle portion which has stick sheet. These cars laid on the plate and approach to the land with moving of the plate, and the first car is stopped by the backstop. Although the spring between the first car and the middle portion car of sticked with plate suffered compression, the springs of behind cars suffered non deformation. The middle car sticked with plate and moves as same rate as the plate, and behind cars laying on the plate followed the middle car. There is no rate difference between the middle portion and behind cars. In this model, the behind car of seaward accretionary prism can not deformed at interseismic period, however, the interseismic micro seismicity and creep deformation is measured at the Nankai accretionary prism. The hypothesis that the incomplete lock of the middle car of seismogenic zone can transpose the strain shalloward. If the moving rate of the middle car is slower than the plate with creeping, the spring of behind car must be compressed in the experiment.