

## عنوان مقاله:

ACTIVE MONITORING OF EARTHQUAKE FOCAL ZONE USING ULTRA-STABLE SEISMIC SOURCE

## محل انتشار:

هفتمین کنفرانس بین المللی زلزله شناسی و مهندسی زلزله (سال: 1394)

تعداد صفحات اصل مقاله: 7

## نویسندگان:

Junzo KASAHARA - *Visiting Professor, Shizuoka University and Visiting Professor, Tokyo University Marine Sci. & Tech*

.Kayoko TSURUGA - *Associate Professor, Tokyo University of Marine Sci. & Tech*

.Yoko HASADA - *Researcher, Daiwa Exploration and Consulting Co., Ltd*

## خلاصه مقاله:

The zone at approximately 30 km depth along the subducting Philippine Sea plate around Lake Hamana was possibly the pre-slip zone just before the 1944 Tonankai Earthquake ( $M_w=8.2$ ). By the seismic refraction survey in the central Japan (Iidaka et al., 2013) showed the presence of strong seismic reflector at this zone suggesting the presence of fluid as the cause of pre-slip. If the migration of fluid could control the earthquake generation, it is worthwhile to monitor the change of seismic reflectivity at the future focal zone for understanding of earthquake generation process. The seismic ACROSS (Accurately-Controlled and Routinely-Operated Signal System) enables us to continuously monitor the temporal change of the amplitude and/or travel time of the reflection phases from the focal zone on the plate boundary because of very accurate-and-stable seismic signals. The seismic ACROSS source controlled by GPS clock is a fixed-type source which can generate 10-50 Hz and 40 ton-f at 50 Hz. To evaluate the seismic characteristics before and after the change by the seismic ACROSS(s) source and optimized source-receiver array and to image the time-variant target region, we study the case with a velocity change of ~30 % in a deep slip zone with a 10 -km-long and 200-m-thick at 30-km-depth, by applying an imaging method using the backpropagation of residual waveforms from the receivers. We can robustly obtain the shape and location of the time-variant targets even if it is the case of a single source or there is the change in a near-surface layer. We conclude that ACROSS technology is very promising to monitor the temporal change of physical properties in the time-variant regions with variable scale and depth.

## کلمات کلیدی:

Active Monitoring, Earthquake Generation, Fluid Migration, Backpropagation, ACROSS

## لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/1132362>



