

Japan Geoscience Union Meeting 2011

(May 22-27 2011 at Makuhari, Chiba, Japan)

©2011. Japan Geoscience Union. All Rights Reserved.



SSS028-03

Room:302

Time:May 26 09:00-09:15

Heterogeneous structures in the source region of the 1891 Nobi Earthquake based on a dense linear array

Aitaro Kato^{1*}, Atsushi Saiga¹, Hiromu Otsu¹, Toshihiro Igarashi¹, Eiji Kurashimo¹, Takashi Iidaka¹, Takaya Iwasaki¹, Tetsuya Takeda², Group for Joint Seismic Observations in the source region of the Nobi Earthquake¹

¹ERI University of Tokyo, ²NIED

We deployed a dense seismic array along the source faults of the 1891 Nobi-earthquake (the largest magnitude intraplate earthquake in Japan). The seismic array consisted of 98 temporary seismometers with spatial interval of about 1 km. We manually picked first arrival times of P and S-waves for local and intraslab earthquakes beneath the seismic array, based on JMA catalog. Then, we obtained a detailed velocity model along the source faults, applying the TomoDD-code. In addition, we calculated receiver functions using teleseismic waveforms recorded by stations equipped with 1 Hz seismometers within the array, applying the spectral division.

The depth of hypocenters gradually deepens from NW to SE. At NW edge, we found out a localized low velocity layer near the bottom of the seismogenic zone. This low velocity layer also gradually deepens toward SE. Most of earthquakes near the faults occur along the periphery of high velocity bodies. We identified a high-velocity gap at depths around 20 km beneath the source faults. Furthermore, the oceanic Moho of subducting Philippine Sea Plate is imaged around SE areas.