

## Evaluation of Rayleigh-wave group velocities using seismic interferometry in the vicinity of Tachikawa fault zone

ISHIGE, Hirokazu<sup>1\*</sup> ; CHIMOTO, Kosuke<sup>1</sup> ; SAGUCHI, Koichiro<sup>1</sup> ; YAMANAKA, Hiroaki<sup>1</sup> ; SAKAI, Shin'ichi<sup>2</sup> ; KURASHIMO, Eiji<sup>2</sup> ; HIRATA, Naoshi<sup>2</sup>

<sup>1</sup>Interdisciplinary Graduate School of Science and Engineering, Tokyo Institute of Technology, <sup>2</sup>Earthquake Research Institute, the University of Tokyo

Recently, seismic interferometry has attracted the attention as one of the geophysical exploration methods. In this study I evaluated the surface-wave group velocities in the vicinity of Tachikawa fault zone in Kanto basin, Japan, using seismic interferometry for continuous earthquake data. First, I analyzed the dispersion of the surface-wave group velocity from estimated Green's function based on cross-correlation function between each pair of observation points. Next, I conducted the slowness tomography analysis of the surface wave arrival times, using criteria on the application range of the seismic interferometry proposed by Chimoto and Yamanaka (2013). Apparent differences in the tomography maps of group velocity were observed in the southwest side and the northeast side of the Tachikawa fault. In the southwest side of the Tachikawa fault, longer period surface-wave has wider area with high group velocity. I finally compared the group velocities observed from seismic interferometry with those calculated from existing subsurface structure model. The results show that the high group velocity area found in the southwest side become wider at shorter period band than those in the existing model. This suggests that the thickness of the surface layer is thinner than the existing model.

Keywords: Tachikawa fault zone, Seismic interferometry, Rayleigh wave, surface-wave group velocities