

ポスター会場（1日目） | 一般セッション：S06. 地殻構造

2025年10月20日(月) 17:15 ~ 19:00 P06会場 (502+503)(502+503)

[P06] 地殻構造**[P06-06] Estimation of long-term crustal seismic velocity variations in the Nagano region, Japan, using seismic interferometry**

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The magnitude 9.0 Tohoku-oki earthquake occurred on March 11, 2011, leading to a devastating tsunami, causing extensive damage and many casualties. Thanks to Japan's dense seismic networks, this event was one of the most well recorded major earthquakes. It also triggered seismicity all over Japan, such as in the Nagano region, where the Mw 6.2 Northern Nagano earthquake occurred 13 hours later (on 2011-03-12, at 3:59 JST), followed, one month later, by a Mw 5.4 earthquake (e.g., Shimojo et al., 2014, 2021). In this study, we focus on the Northern Nagano region, and assess the wave velocity temporal evolution using ambient noise seismic interferometry. This method correlates continuous noise recordings to estimate the temporal seismic velocity variations in the medium (Shapiro and Campillo, 2004; Shapiro et al., 2005; Brenguier et al., 2014). We use the permanent NIED Hi-net network to compute daily cross-correlation functions for numerous stations, which are then filtered for different frequency bands. We retrieve the components of the Green's function of the medium between pairs of stations, for all the component combinations. Using the wavelet cross-spectrum analysis (Mao et al., 2019; Paris et al., 2025), we estimate the wave velocity variations of all stations, for the time period between October 2010 and September 2011. These time-series are fitted (Hobiger et al., 2014) so that a single velocity variation value is estimated for each earthquake, at each station. We finally obtain the velocity variation spatial distribution to better assess the impact of the 2011 events on the Northern Nagano region. Our ongoing work aims to estimate the velocity variations for longer time periods and observe the post-seismic recovery in the region, following the 2011 Tohoku-oki earthquake. This analysis could also help differentiate velocity changes caused by the megathrust earthquake from those induced locally by the Northern Nagano earthquake.