[JJ] Eveningポスター発表 | セッション記号 S (固体地球科学) | S-SS 地震学

[S-SS11]地殻構造

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固体地球の第一層を構成する地殻の構造について検討する．観測に基づく構造の記述やその進化の解明に加え，地震や火山など地殻内における諸現象の理解，地殻内物質の地質学的研究など，地殻に関わる多様な視点からの講演を歓迎する．また，これらの理解の基礎となる観測手法やデータ処理手法などについての発表も歓迎する．

[SSS11-P17]Regional-scale cross-correlation analysis of seismic ambient noise in the Central Indonesia (2)

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The central Indonesia has a complex tectonic structure which is characterized by several subduction zones (e.g., double subduction zones beneath Molucca Sea) and active faults (e.g., Palu Koro, Matano and Hamilton faults). However, due to the limitation of studies, the information of seismic velocity changes beneath the desired regions is needed for monitoring those structures. Currently, cross-correlation functions (CCFs) retrieved from ambient seismic noise are assumed as the representation of the surface wave green function that can show the response of the Earth. Our previous study at Sulawesi Island (Budiati et al., 2017) observed the dominant energy of CCFs at period of 10 s - 30 s with velocity around 2 - 3km/s which were interpreted as Rayleigh waves. Currently, we enhanced the station pairs in order to further investigate the propagation direction of the surface waves and to extract 1D velocity structure beneath the station pairs by comparing the observed dispersion curves of the Rayleigh waves and the calculated crustal model obtained from CRUST 1.0 (Laske et al., 2013). In the present study, we used the vertical component of continuous and broadband (20 sps) seismograms recorded at eight permanent stations in and around Sulawesi Island (station codes: APSI, BKB, KMSI, LUWI, SANI, TNTI, TTSI, and TOLI2). The data period encompasses 1 January to 31 May 2015 (five months). The data were divided into 20 minutes segments with time shift in every 5 minutes to enhance the signal to noise ratio (SNR). We applied taper, whitening, band-pass filter at the frequency band of 0.01 Hz - 1 Hz and binalization in each data segment as the preprocessing steps, then selected the feasible segments and calculated CCF between two contemporaneous segments from two stations. We further stacked the CCFs for 1 day to obtain day-averaged CCFs, and finally stacked the day-averaged CCFs over 5 months to retrieve stabilized Rayleigh wave signals. The 5 months CCFs were then filtered at center period of 0.25 s - 32 s to find the dominant energy of the CCFs. Our recent findings suggest that the SNR measurements are enhanced at up to 12 station pairs after calculating 5-month-averaged CCFs and represent clear Rayleigh waves. The asymmetric shapes of the CCFs indicate that the Rayleigh waves propagated towards Sulawesi Island not only from eastern to northwestern (Budiati et al., 2017), but also from northeastern to southwestern and vice versa.