On S wave picking of the 2016 Kumamoto earthquake

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Picking of S wave is essential in various seismic analyses such as hypocenter location, seismic tomography, waveform inversion, spectral inversion, and so on. It is more difficult to detect the onset of S waves than that of P waves since the start of S wave packets are buried by later phases of P waves. Especially local seismic records are so susceptible for local site effects that the onsets of S waves are prone to become rather vague. Hence the accuracy of S wave detection strongly affects the outcomes of aforementioned seismic analyses, the accurate and objective S wave detection is desirable.

Recently, an abundance of seismic stations has been deployed in all over the world and plenty of seismic records have been obtained so automatic P and S wave picking techniques have been developed. Some of those techniques make use of STA/LTA , polarization of waveforms, and stochastic characteristics, and so on.

In this study, the author applied those S wave picking techniques for waveform data of the 2016 Kumamoto earthquake recorded by KiK-net underground stations and made some trials to pick S waves precisely and objectively.

Acknowledgement: I would like to express my gratitude to NIED for providing me with KiK-net data.

Keywords: S wave, onset time, the 2016 Kumamoto earthquake

