2016年熊本地震源域における地震波減衰構造

The seismic attenuation structure in the focal area of the 2016 Kumamoto earthquake

*神薗 めぐみ1、松本 聡2、志藤 あずさ2、山下 裕亮3、中元 眞美4、宮崎 眞大3、酒井 慎一5、飯尾 能久3、2016年熊本地震 合同地震観測グループ

Megumi Kamizono1, Satoshi Matsumoto2, Azusa Shito2, Yusuke Yamashita3, Manami Nakamoto4, Masahiro Miyazaki3, Shin'ichi Sakai5, Yoshihisa Iio3, Group for urgent joint seismic observation of the 2016 Kumamoto earthquake

The 2016 Kumamoto earthquake occurred in April 2016. The first earthquake (M6.5) occurred at 21:26 (JST) on April 14th. The main shock (M7.3) occurred at 1:25 (JST) on April 16th. The aftershock activity is high and the active area covers entire Hinagu and Futagawa fault zones. The velocity structure by travel time tomography method in this area suggested that the heterogeneous feature controlled the seismic activity. In this study, we investigate relationship between the activity and heterogeneous structure with shorter wavelength.

Small scale heterogeneity in the earth is evaluated from attenuation factors of seismic waves as Q^{-1} value. We analyzed data before and after the 2016 Kumamoto earthquake and estimated the Q^{-1} values for both intrinsic and scattering attenuation. To estimate spatial distribution of the attenuation factors, Del Pezzo et al. (2016) had proposed a method in which the spatial weighting functions for estimated Q^{-1} values of many source-receiver pairs was adopted. However, the weighting function was not applicable to our data because of various hypocentral distance until several tens kilometers. Therefore, in this study, we consider the appropriate weighting function by Monte-Carlo simulation and estimate the Q^{-1} structure in the hypocentral area of the 2016 Kumamoto earthquake.

Acknowledgements
We used data by JMA, NIED, Kyoto and Kyushu Universities. We are grateful to Dr. Hoshiba for the computation program of Monte-Carlo simulation.

キーワード：2016年熊本地震、地震波減衰、布田川－日奈久断層带
Keywords: The 2016 Kumamoto earthquake, seismic attenuation, Futagawa - Hinagu fault zone