Strong motion characteristics at Nagomi-machi, Eta, during the northern Kumamoto pref. earthquake of Jan. 3rd, 2019

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We estimate ground motion characteristics of Eta, Nagomi-machi, Kumamoto, during the 2019 Jan. 3rd northern Kumamoto earthquake (MJ5.5). The JMA seismic intensity of 6weak was observed at the site. Before this event, we have conducted the microtremor array measurement and obtained that the thin (about 20m) superficial layer with a S-wave velocity of less than 0.2km/s. We also estimated site amplification factor by the spectral inversion method (Somei et al., 2018). The site amplification factor shows the predominant period of about 0.4s for weak motion data. After the mainshock, we have conducted additional microtremor array measurement to give a more in-detail information in the area and single station H/V observations just beside of the seismic intensity meter and outside of the building for checking the effects of station setting of this site. In this moment, there is no significant effect of the station setting because of the similar H/V spectral ratio between the site and the one outside of the building in this period range. We also noticed that the predominant period of observed horizontal motions of the mainshock is about 0.5s, that is a little bit longer than that of the site effect for the weak motions. This would be caused by the non-linear behavior of the superficial layer during the strong shaking. Strong motion data are provided by JMA and Kumamoto prefecture. Microtremor observations and spectral inversion were conducted by the Comprehensive Research Project for the major active faults related to The 2016 Kumamoto Earthquake (2016FY-2018FY), Mext.

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