Characteristics of Near-Fault Ground Motions during the 2016 Kumamoto, Japan, Mainshock

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During the mainshock of the 2016 Kumamoto earthquake, which caused the surface rupture, strong motions (JMA seismic intensity of 7) at Mashiki town and Nishihara village were observed near the surface rupture. We carefully integrated the observed acceleration records to velocities and displacements with correcting the base-line change in acceleration records, which would be caused by the effect of tilting of the seismometer. The corrected observations show large permanent displacements, which include near-fault terms. The amounts of permanent displacements coincide to geodetic observation results. We discuss those ground motion characteristics and compare those with other near-fault ground motion records.

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