

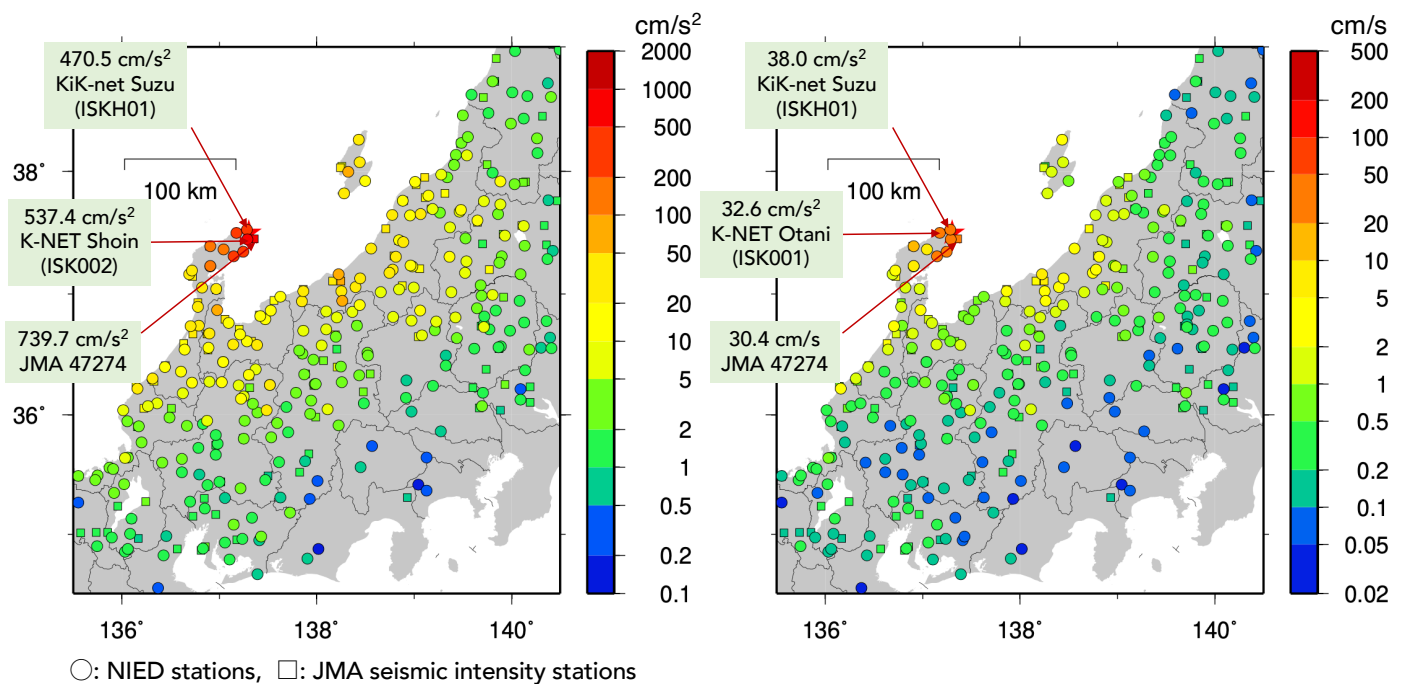
Strong Ground Motions

Earthquake in Noto Peninsula, Ishikawa Pref. on June 3, 2024
(Mj6.0, Mw5.8)

IISEE, Building Research Institute

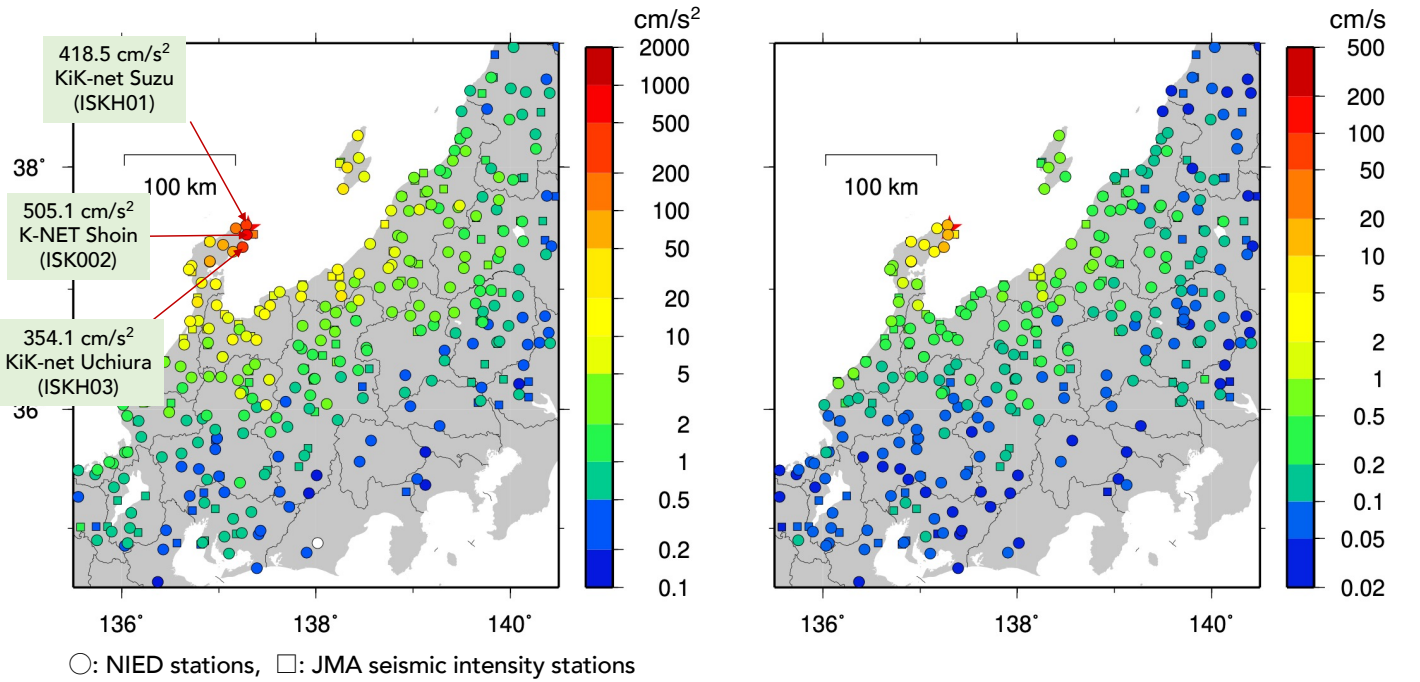
This report contains preliminary analysis results.

Observed PGAs/PGVs (Horizontal comp.)

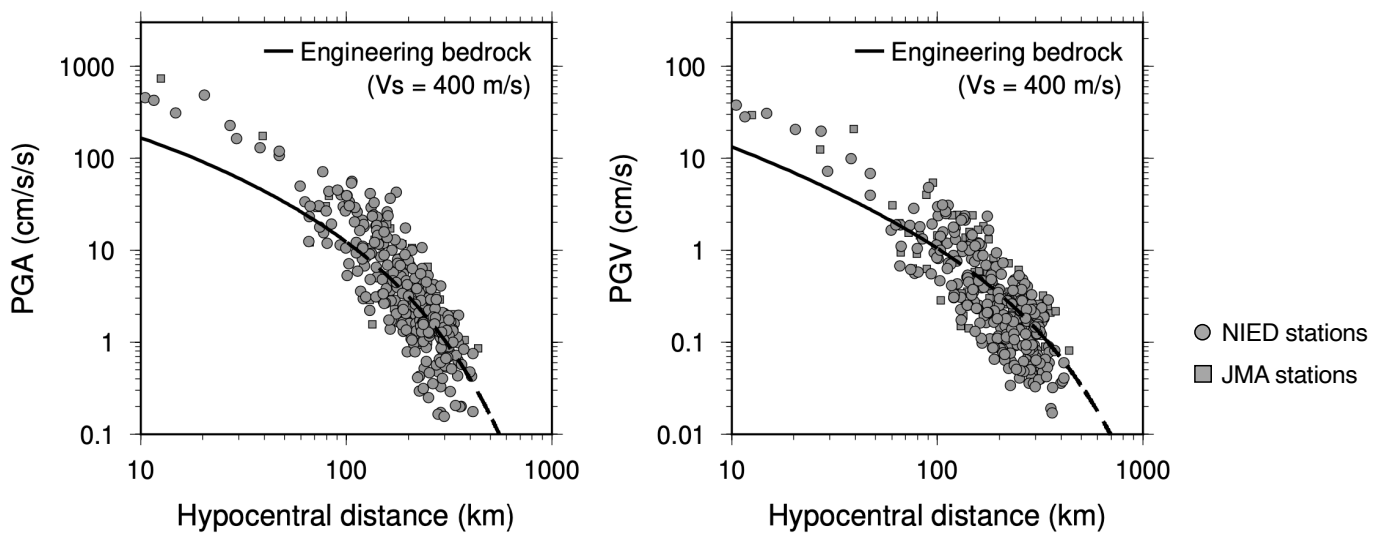


※ PGA and PGV are the maximum values of vector summation in the horizontal components.

Observed PGAs/PGVs (UD comp.)

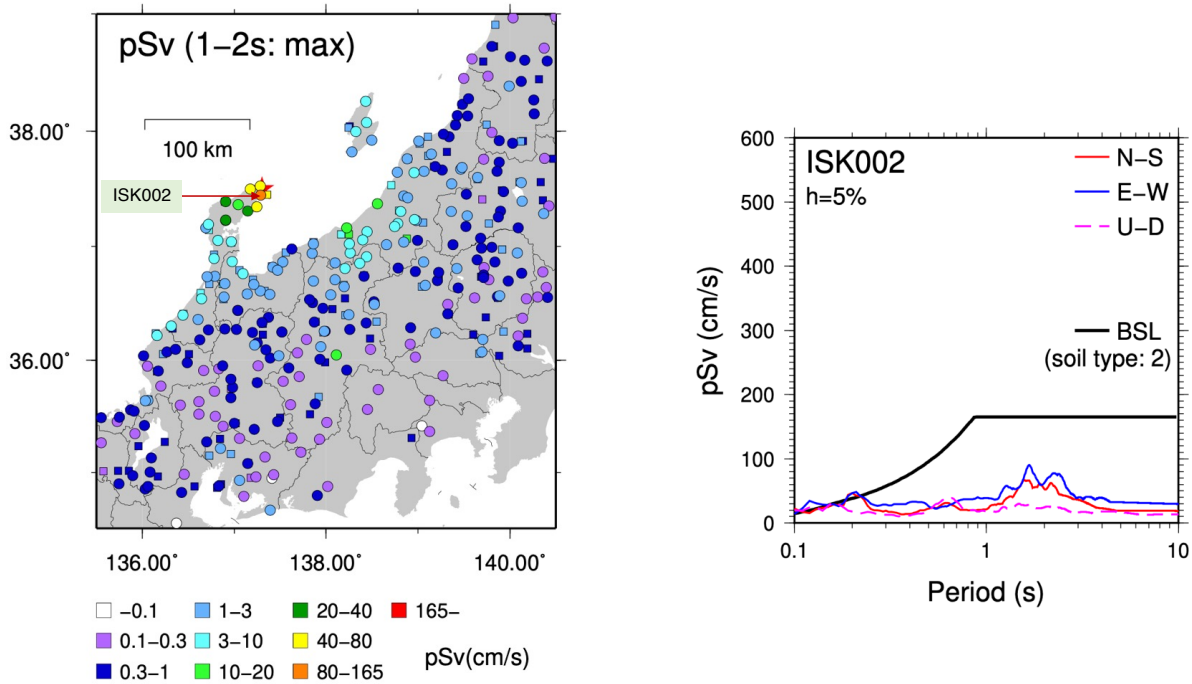


Observed PGAs/PGVs vs GMM (Si & Midorikawa, 1999)

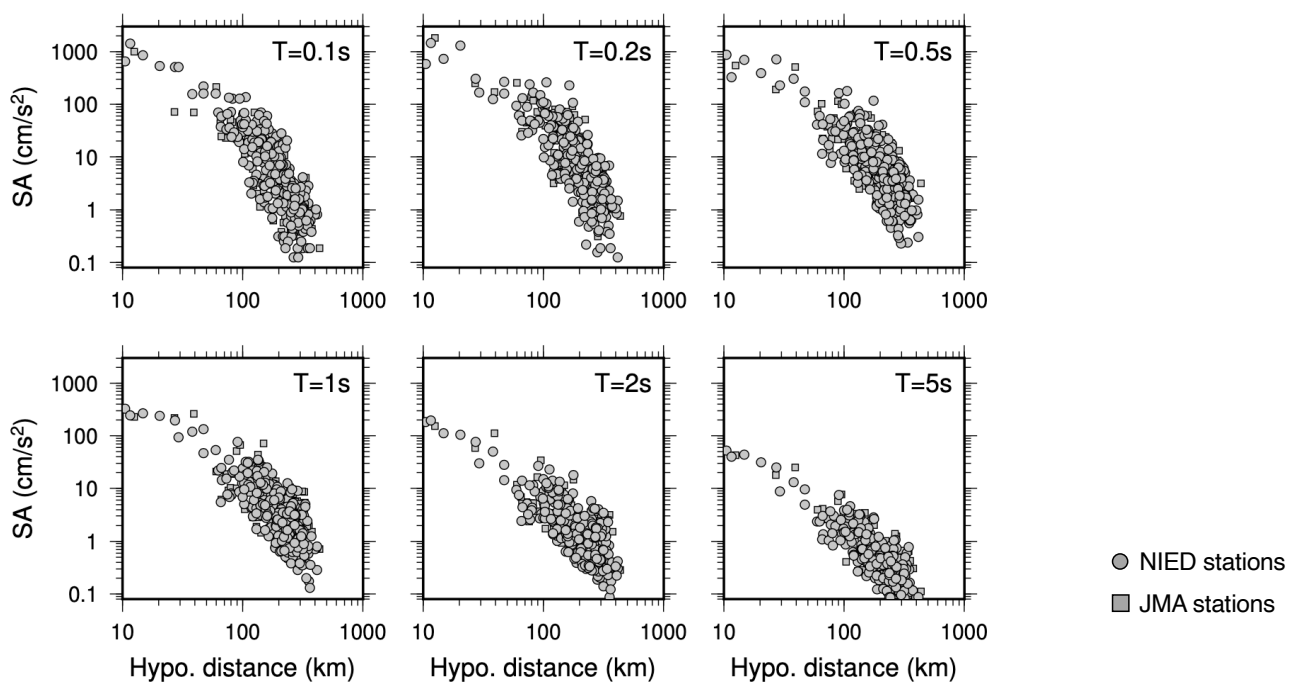


- ※ Horizontal axis is not the "shortest distance to the fault".
- ※ PGA/PGV values are the larger of the maximum values of NS and EW components.
- ※ Inland earthquake (Mw=5.8, depth=10 km) is assumed for the estimation.
- ※ Estimated values beyond 100 km (dashed line) are shown as reference values.

Pseudo-velocity response (pSv: 1–2 s, h=5%)



Attenuation characteristics of response spectra (h=5%)



Summary

K-NET station Shoin (ISK002) shows larger PGA and PGV.

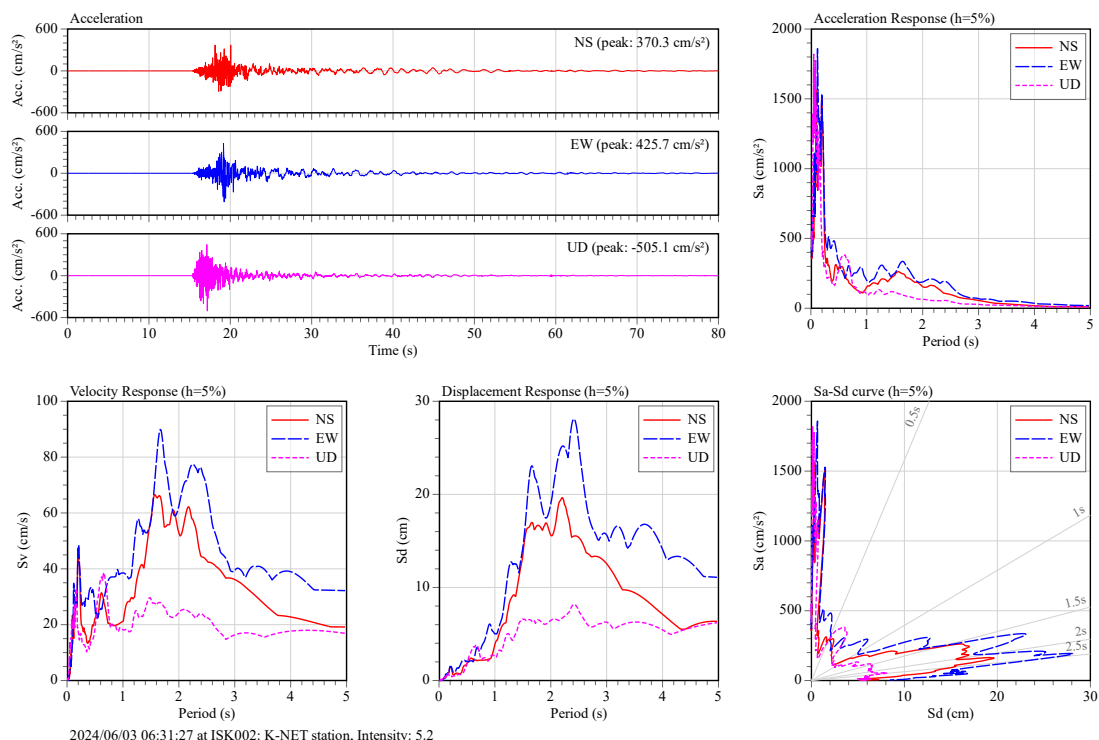
Response of $pSv > 165 \text{ cm/s}$ ($h = 5\%$, $T=1-2 \text{ s}$) were not observed.

Acknowledgments:

We used K-NET and KiK-net strong-motion data provided by the National Research Institute for Earth Science and Disaster Resilience; NIED), Japan (<https://www.doi.org/10.17598/NIED.0004>) We also used strong-motion data from the Japan Meteorological Agency (JMA) seismic intensity stations.

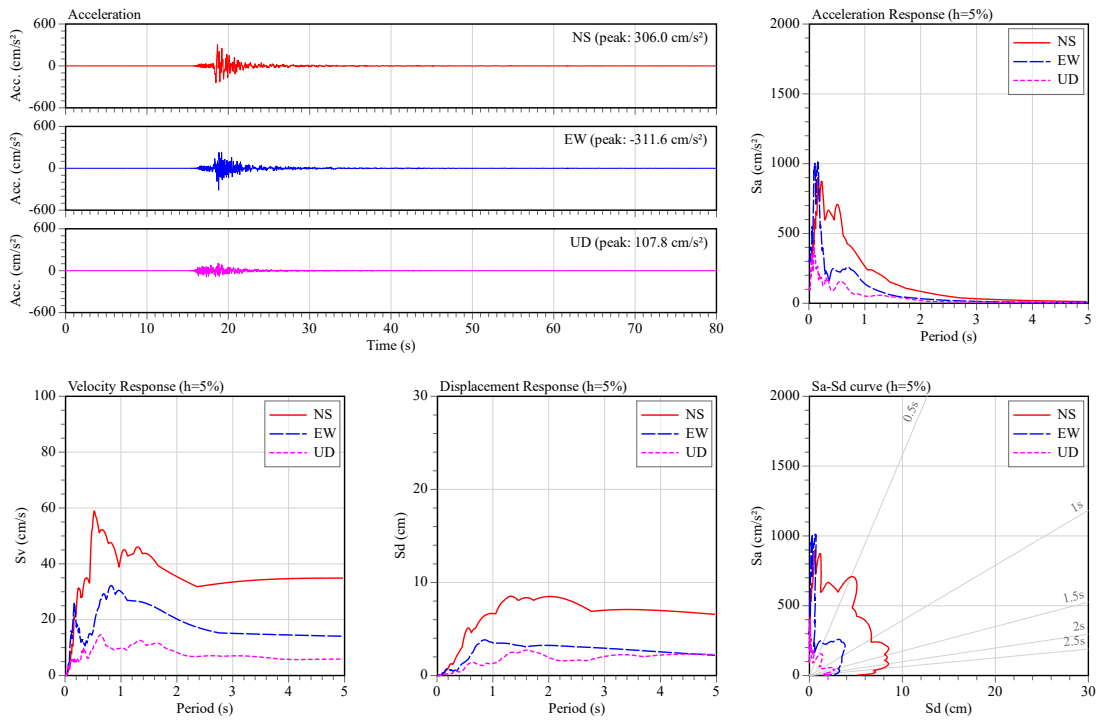
We used hypocenter information, rapidly determined by JMA, and moment magnitude, determined by NIED F-net. Response spectra were calculated using the subroutine program developed by Osaki (1994). Figures were prepared using Generic Mapping Tools (GMT: Wessel and Smith, 1998).

Ground motion at ISK002 (Shoin)



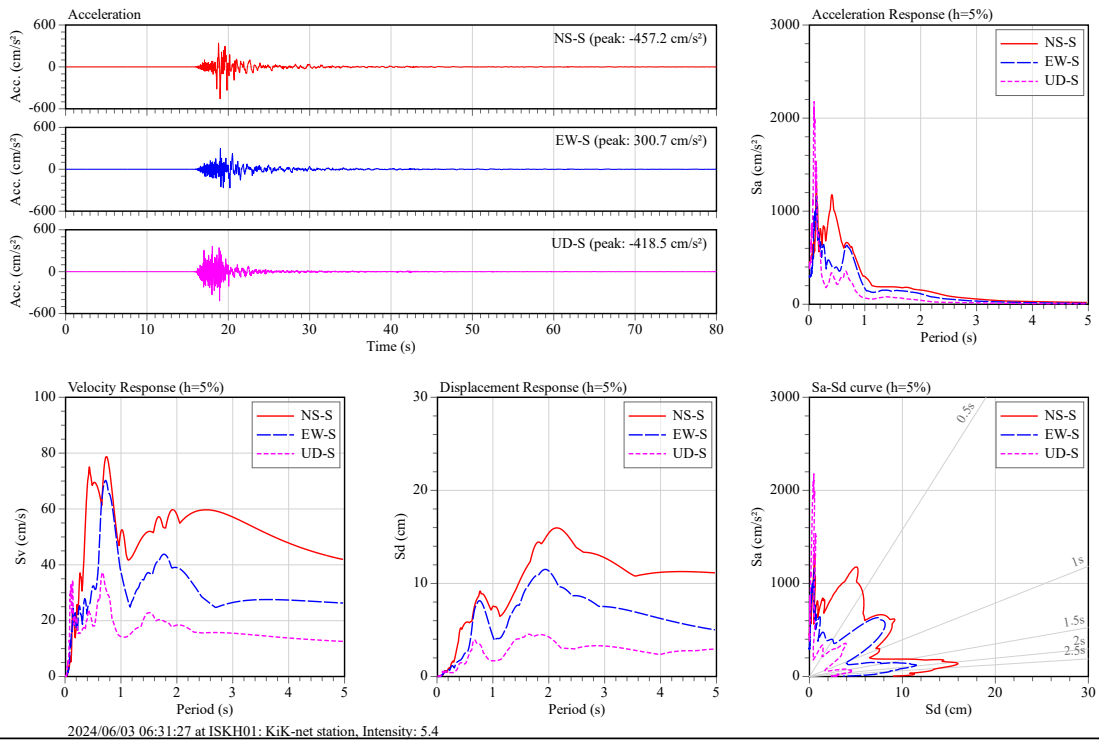
Ground motion at ISK001 (Ohtani)

BRI



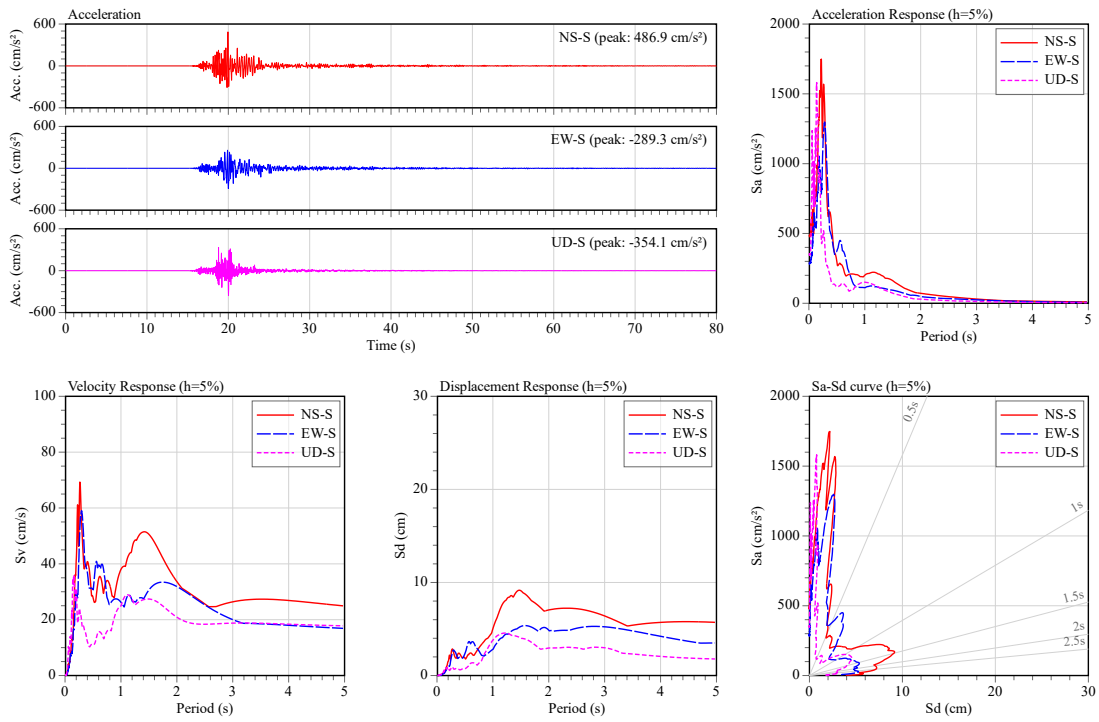
Ground motion at ISKH01 (Suzu)

BRI



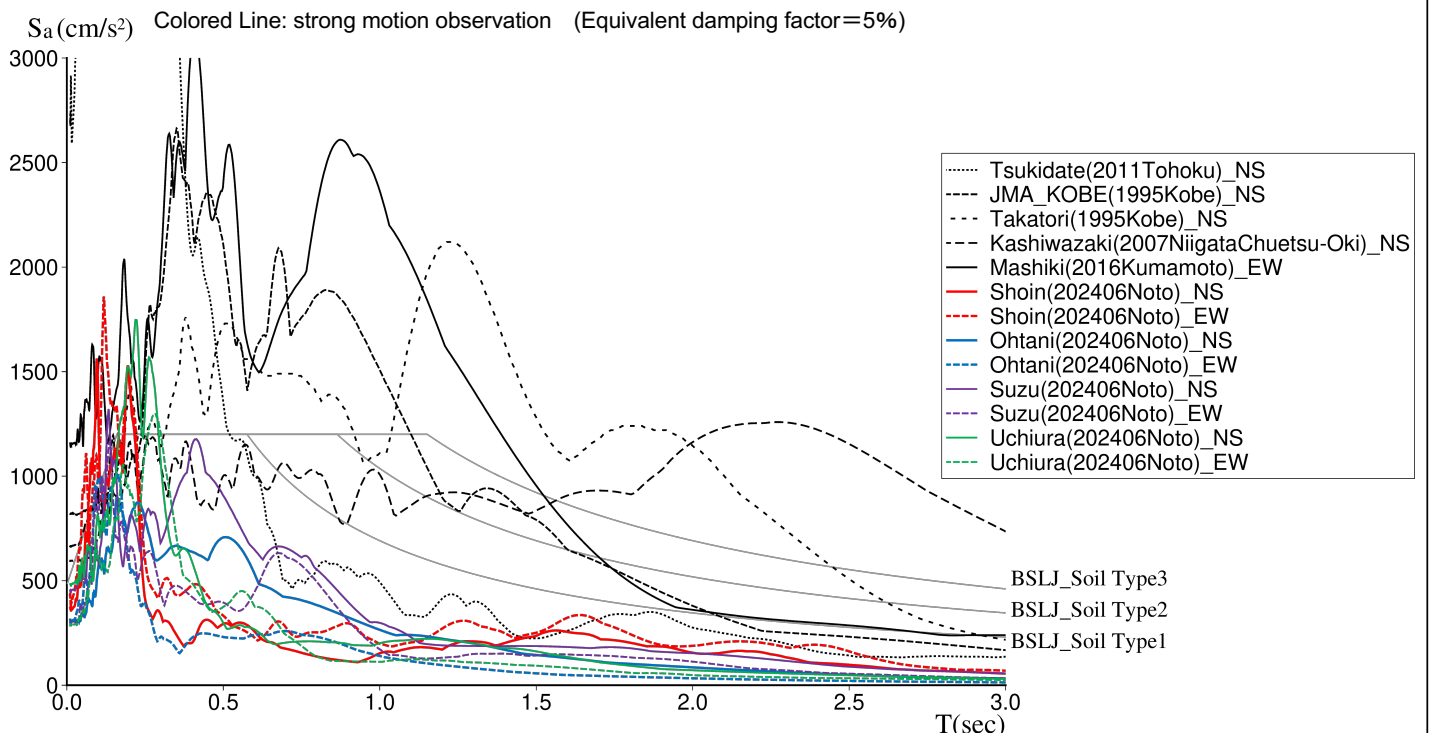
Ground motion at ISKH03 (Uchiura)

BRI

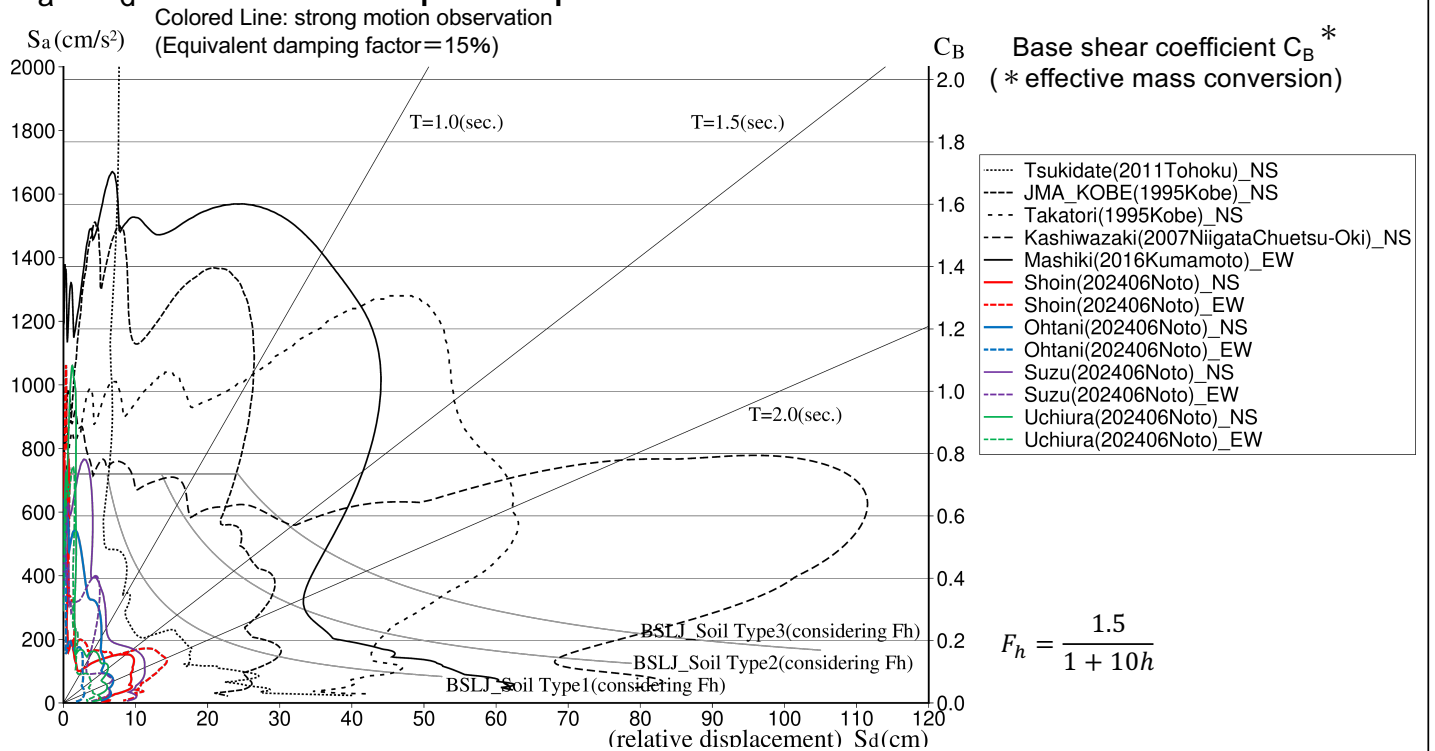


Response acceleration spectrum S_a and response periods

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$S_a - S_d$ curve and response periods



Summary

- The response acceleration (S_a) of the ISK002 (Shoin), ISKH03 (Uchiura), and the North-South (NS) components of ISKH01 (Suzu) showed large values in the period of 0.5 s or less.
- From the S_a - S_d curve assuming a 15% equivalent damping ratio, the S_a - S_d shapes of this earthquake were smaller than past major earthquakes in Japan.

Acknowledgments

We used K-NET and KiK-net strong-motion data provided by the National Research Institute for Earth Science and Disaster Resilience; NIED), Japan (<https://www.doi.org/10.17598/NIED.0004>)

We used strong motion data provided by NIED (K-NET and KiK-net), JMA, and RTRI for past strong motion in Japan.

S_a - T and S_a - S_d were calculated using the View Wave by Kashima, BRI.

Figures were prepared using Generic Mapping Tools (GMT: Wessel and Smith, 1998).