Supplementary file for

A coastal geodetic GNSS station for tectonic and sea-level variations study in the South China Sea

Qiang Qiu, Linlin Li, Mai Ye, Hongqiang Yang, Xingyu Song, Tingting Zheng, Jinghe Cao, Peitao Wang, Zhanying Chen, Zhiwen Zhang, Kuilin Xiao, Xing Huang, Yadong Huang, Chuanyang Zheng, Zhiyuan OuYang, Xiaoming Fu, Muzhong Wang, Zhen Wang, Zitao Zhang, Haiping Cui

This document contains Figures S1-S6.
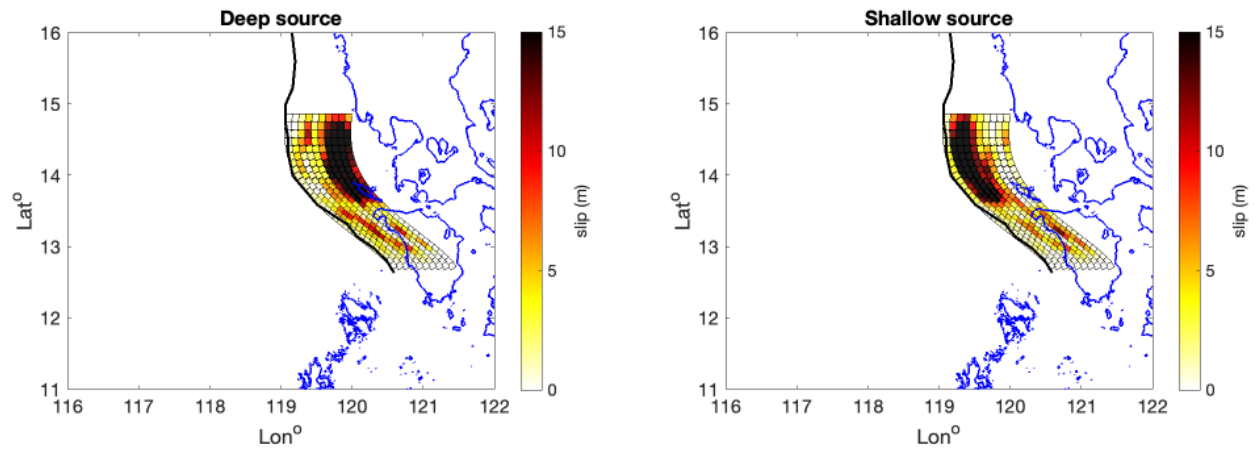
Figure S1. Slip model of case 1 (left panel) and 2 (right panel) used in this study which is taken from Li et al. (2018, 2016).
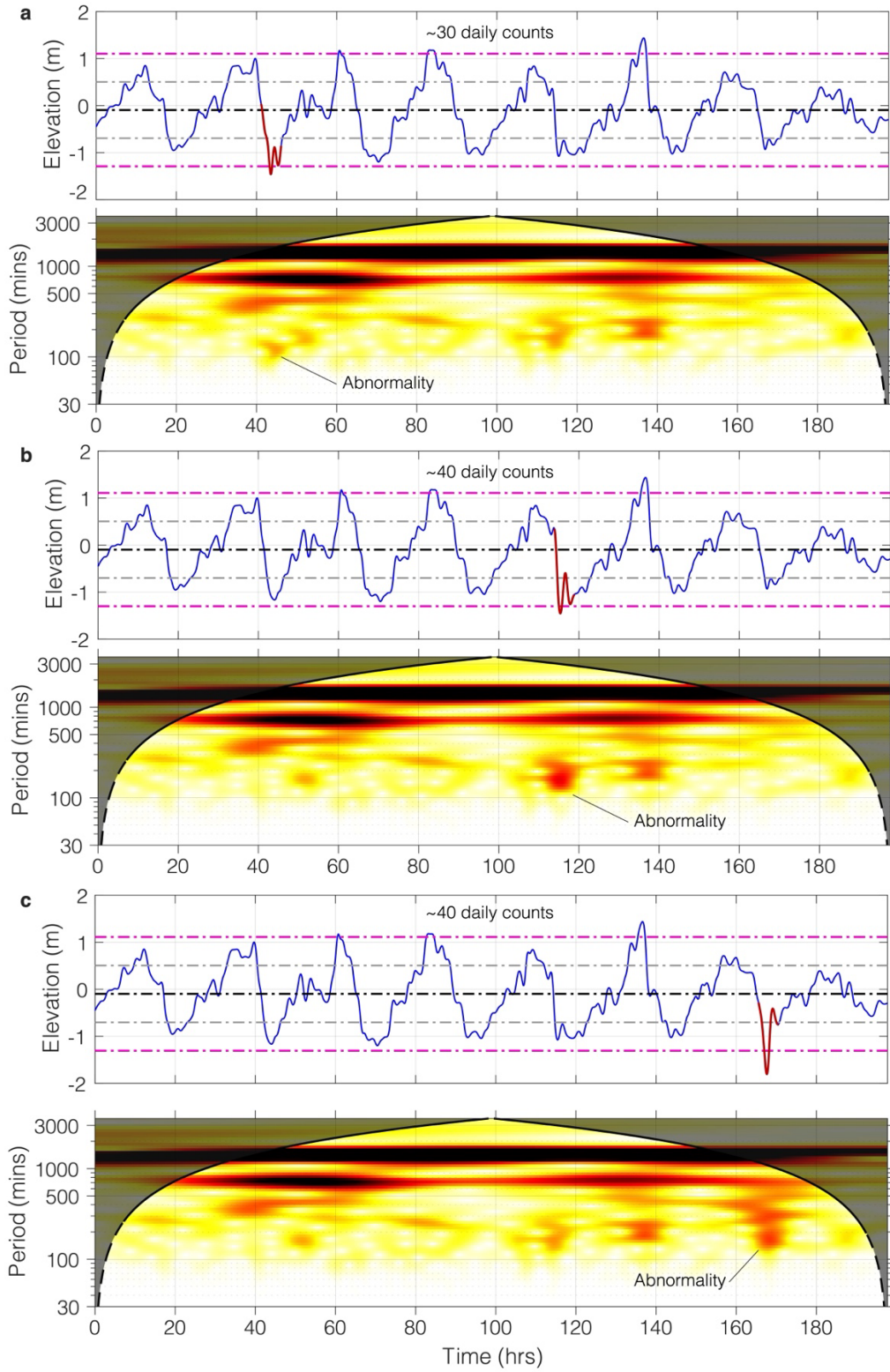
Figure S2. Tsunami detecting experimental tests with tsunami waveforms (case 1) been overlaid within higher daily average rate (>30 average daily counts) at different time window.
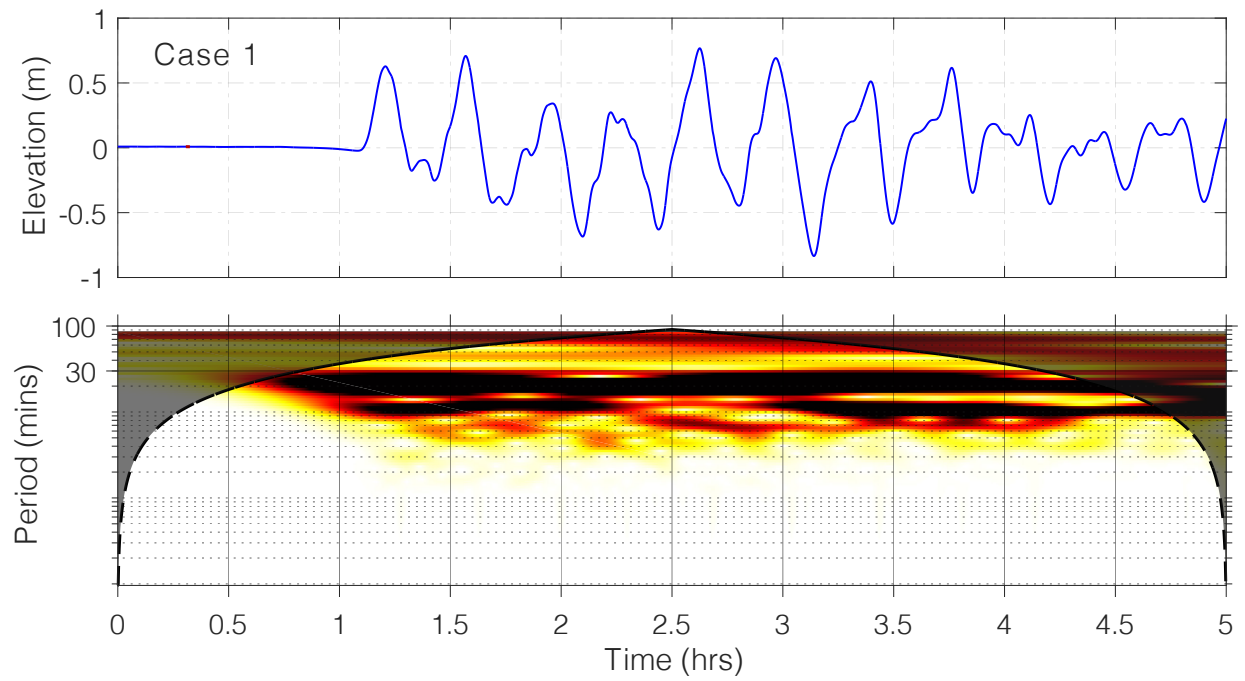
Figure S3. Tsunami waveform (upper) and its wavelet analysis (lower) from a typical subduction zone earthquake (case 1).
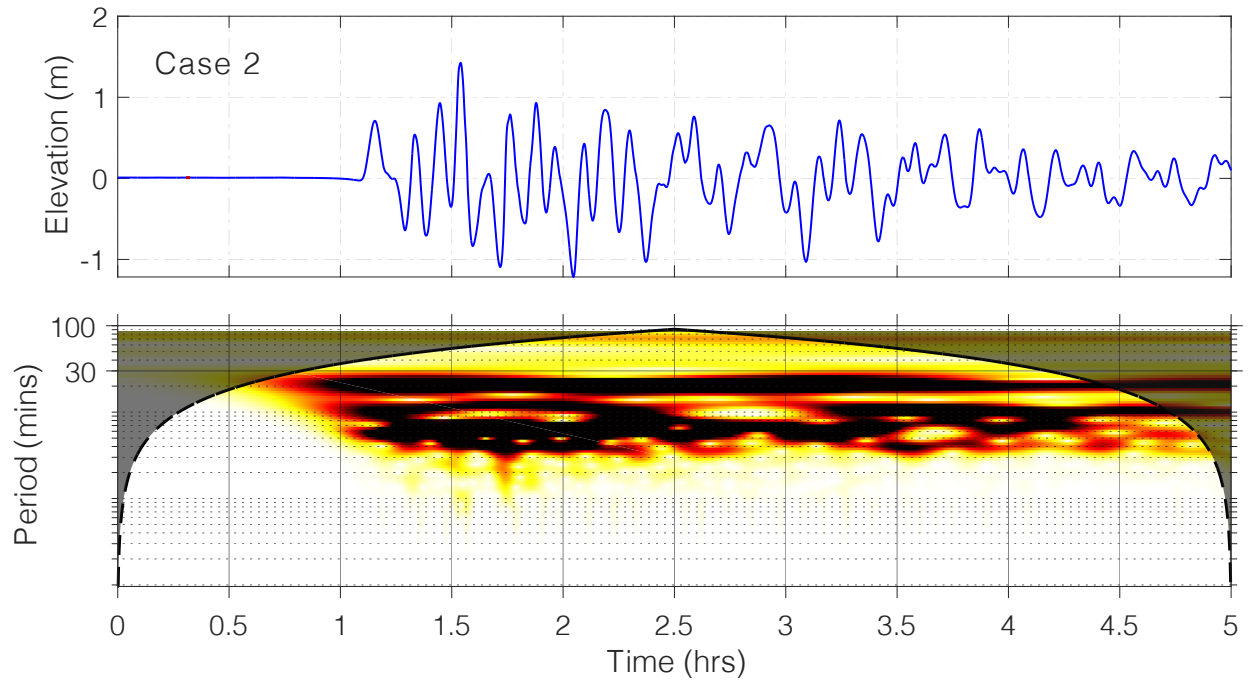
Figure S4. Tsunami waveform (upper) and its wavelet analysis (lower) from a typical shallow-depth subduction zone earthquake (case 2).
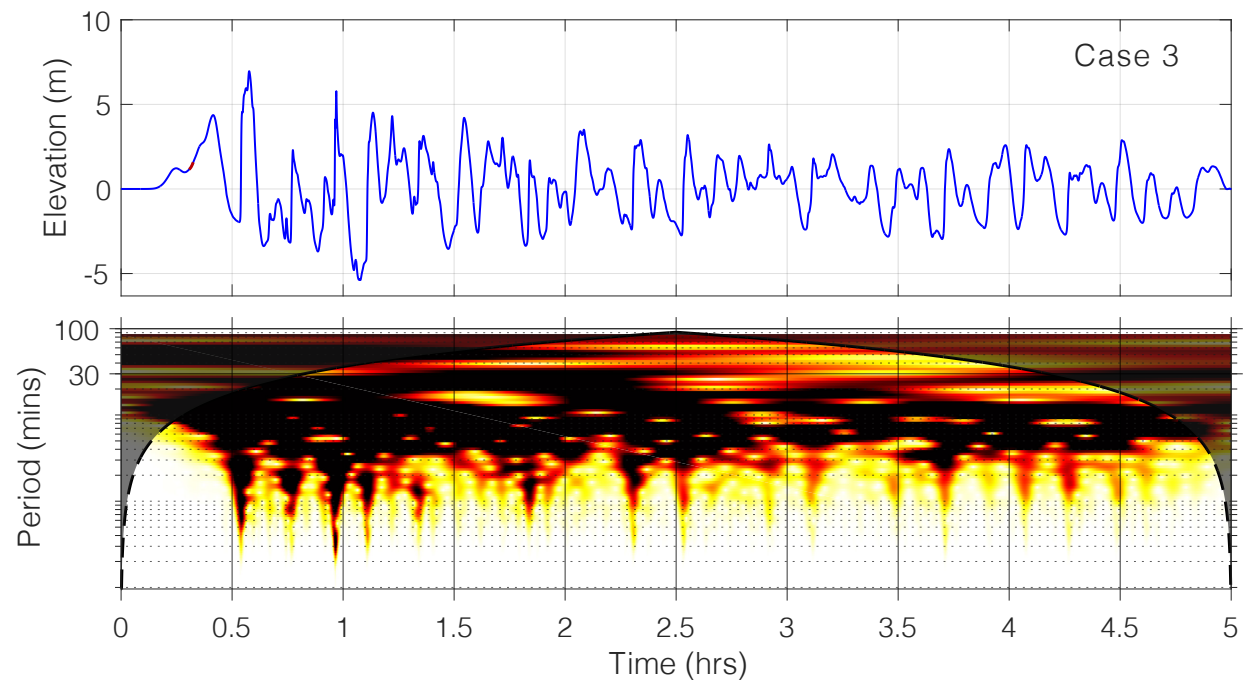
Figure S5. Tsunami waveform (upper) and its wavelet analysis (lower) from a ZMAS submarine landslide (case 3).
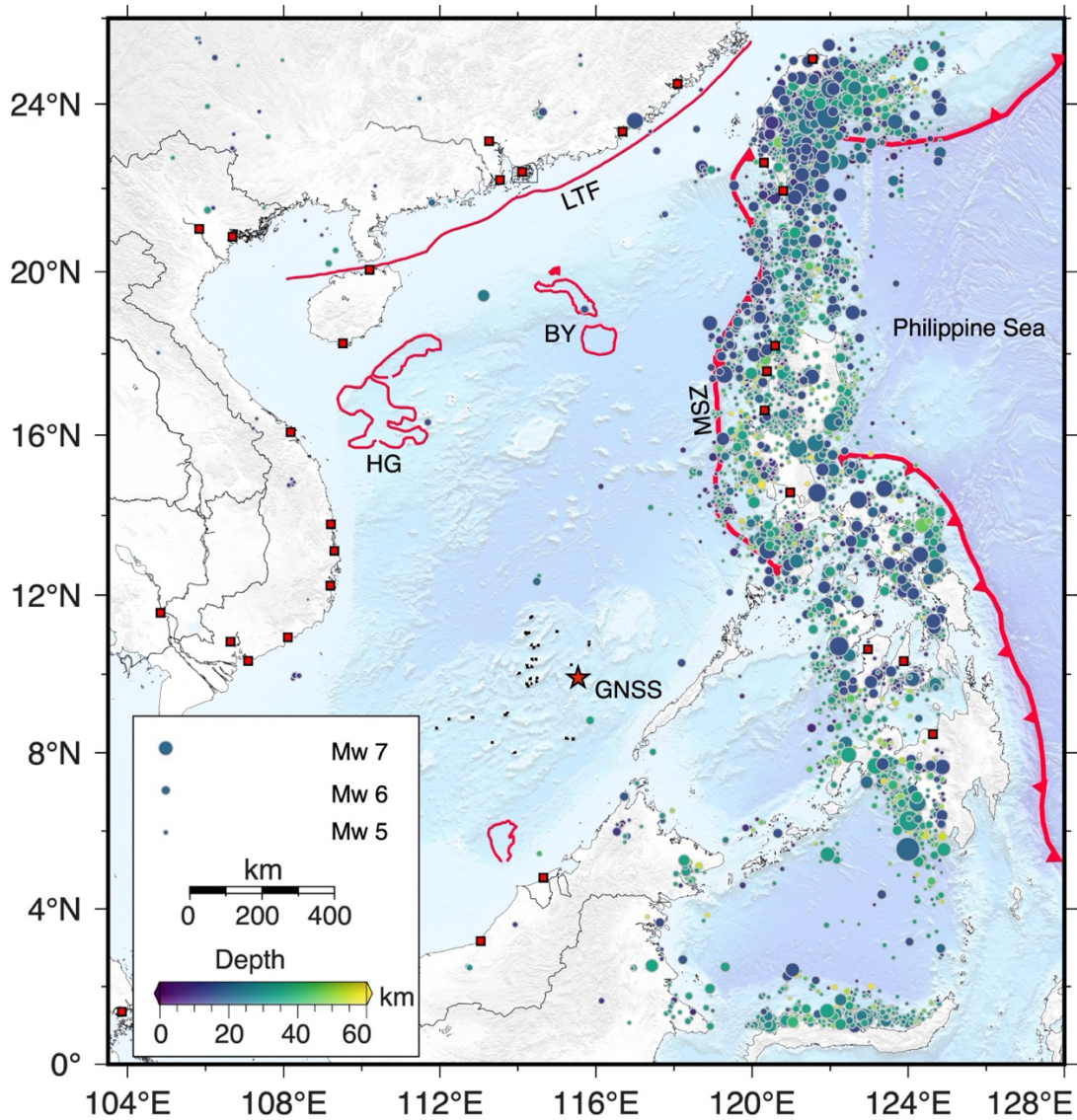
Figure S6. Seismicity with Mw >=4.5 spanning 1900-2025 from USGS catalog (https://earthquake.usgs.gov/earthquakes/search/).

Reference:

Li, L., Switzer, A.D., Chan, C.H., Wang, Y., Weiss, R., Qiu, Q., 2016. How heterogeneous coseismic slip affects regional probabilistic tsunami hazard assessment: A case study in the South China Sea. J Geophys Res Solid Earth 121, 6250– 6272. https://doi.org/10.1002/2016JB013111

Li, L., Switzer, A.D., Wang, Y., Chan, C.-H., Qiu, Q., Weiss, R., 2018. A modest 0.5-m rise in sea level will double the tsunami hazard in Macau. Sci Adv 4. https://doi.org/10.1126/sciadv.aat1180