Preliminary Analysis of the Ground Motion Record at KMUA, Bangkok, During the 2025 Mandalay Earthquake

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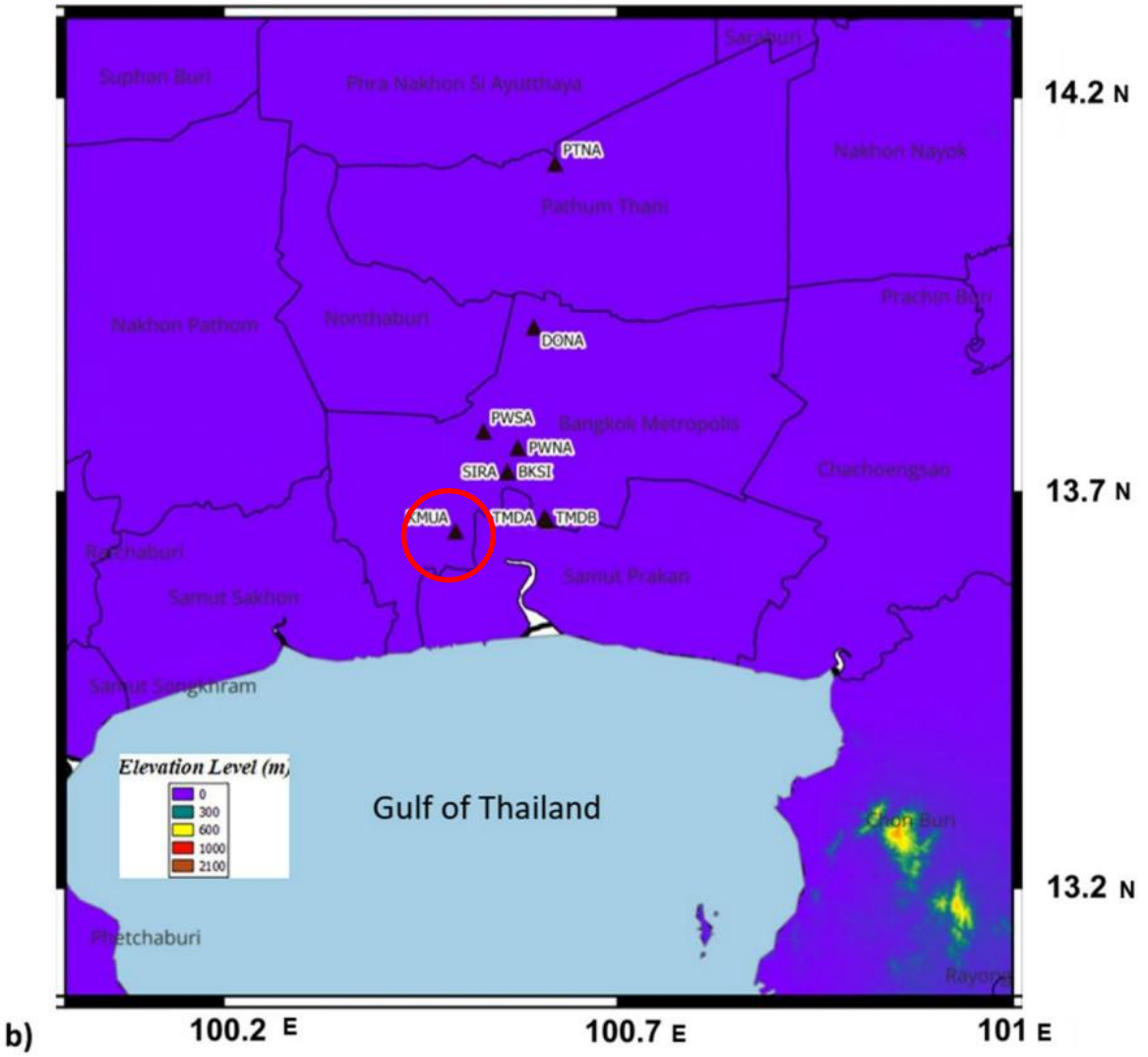
Summary

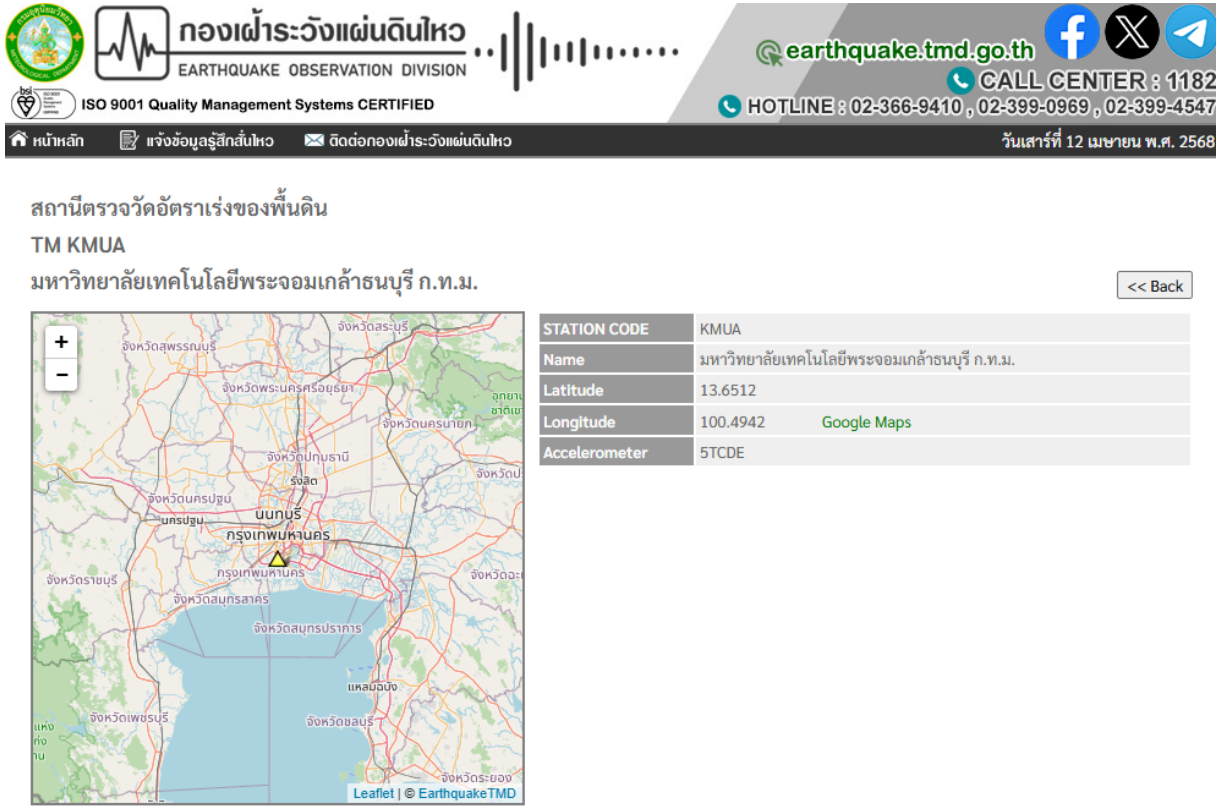
- The JMA seismic intensity of the ground motion record at KMUA (King Mongkut's University of Technology Thonburi) was 3.6 (equivalent to JMA Seismic Intensity 4), and the JMA long-period ground motion intensity was Level 2.
- A peak was observed around a period of 6- 6.5 seconds in the velocity response spectrum, indicating that the area experienced long-period ground shaking.

概要

・バンコク市内のKMUA（King Mongkut's University of Technology Thonburi）で観測された地震動の計測震度は3.6（震度4），気象庁の長周期地震動階級は2であった
・速度応答スペクトルには周期6～6.5秒程度のピークが見られ，周期の長い揺れに見舞われたものと考えられる

Location of KMUA

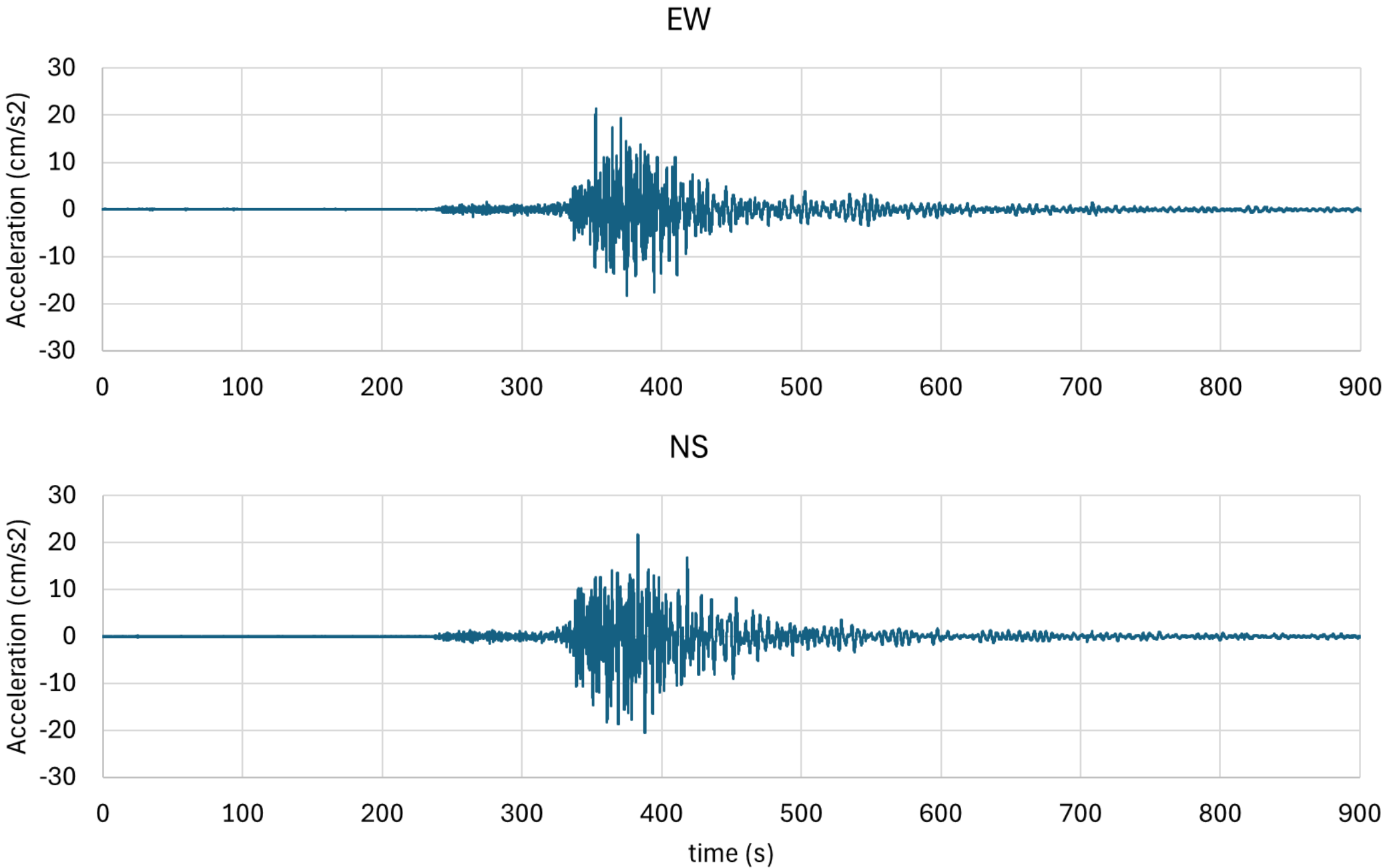




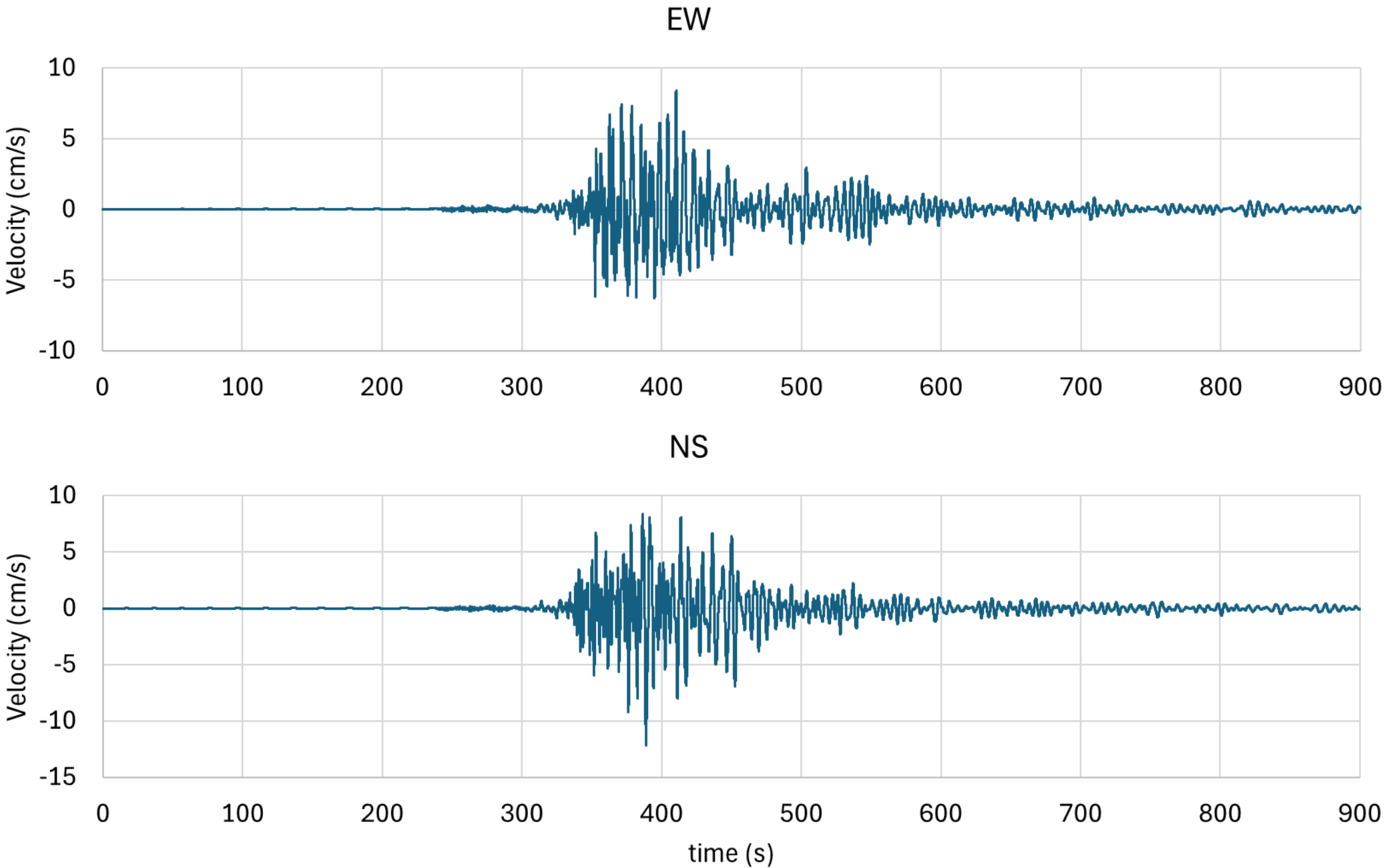
https://earthquake.tmd.go.th/station-info.html?id=199

Ornthammarath et al. (2023) Preliminary analysis of amplified ground motion in Bangkok basin using HVSR curves from recent moderate to large earthquakes, Geoenvironmental Disasters

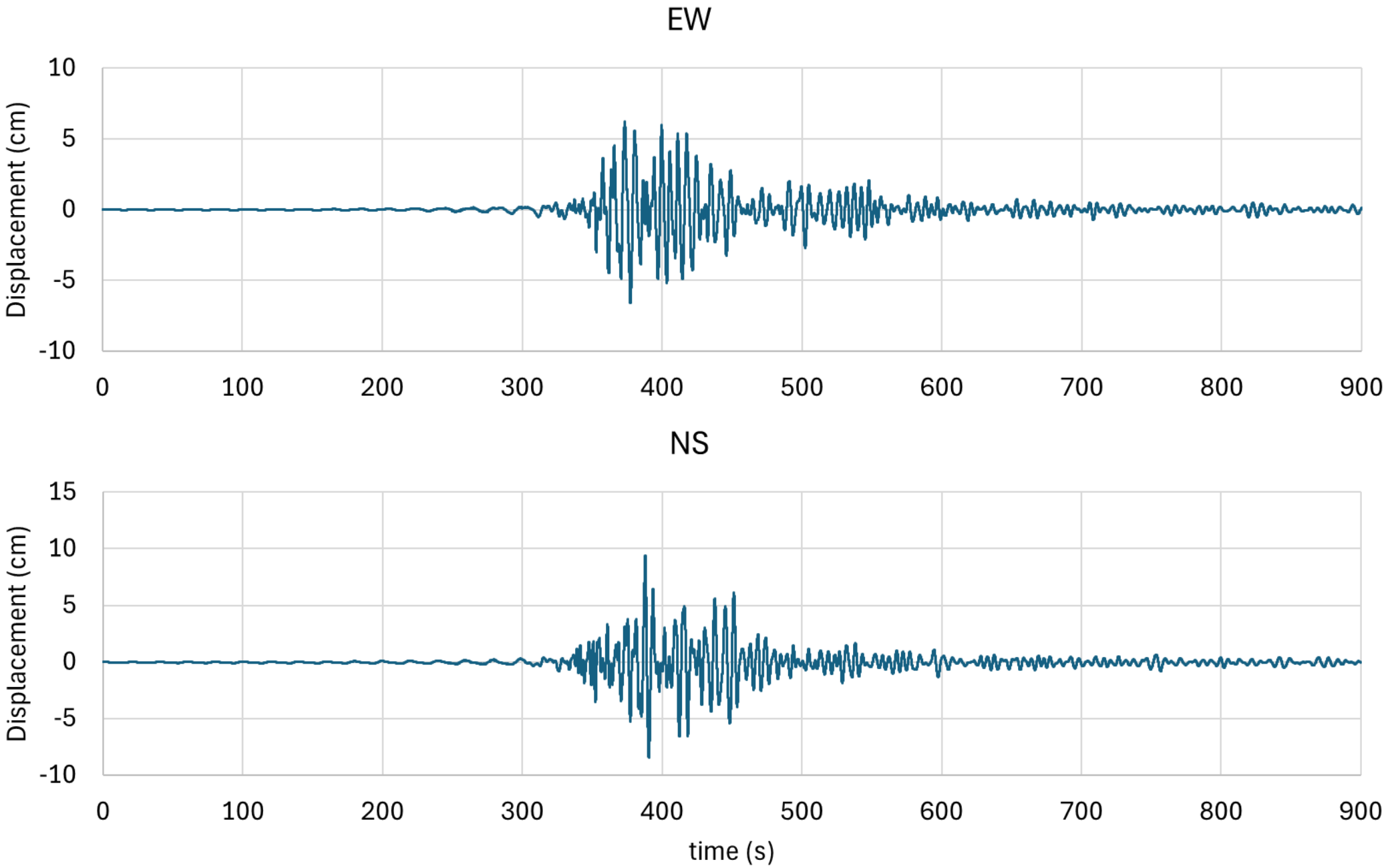
Acceleration Time History



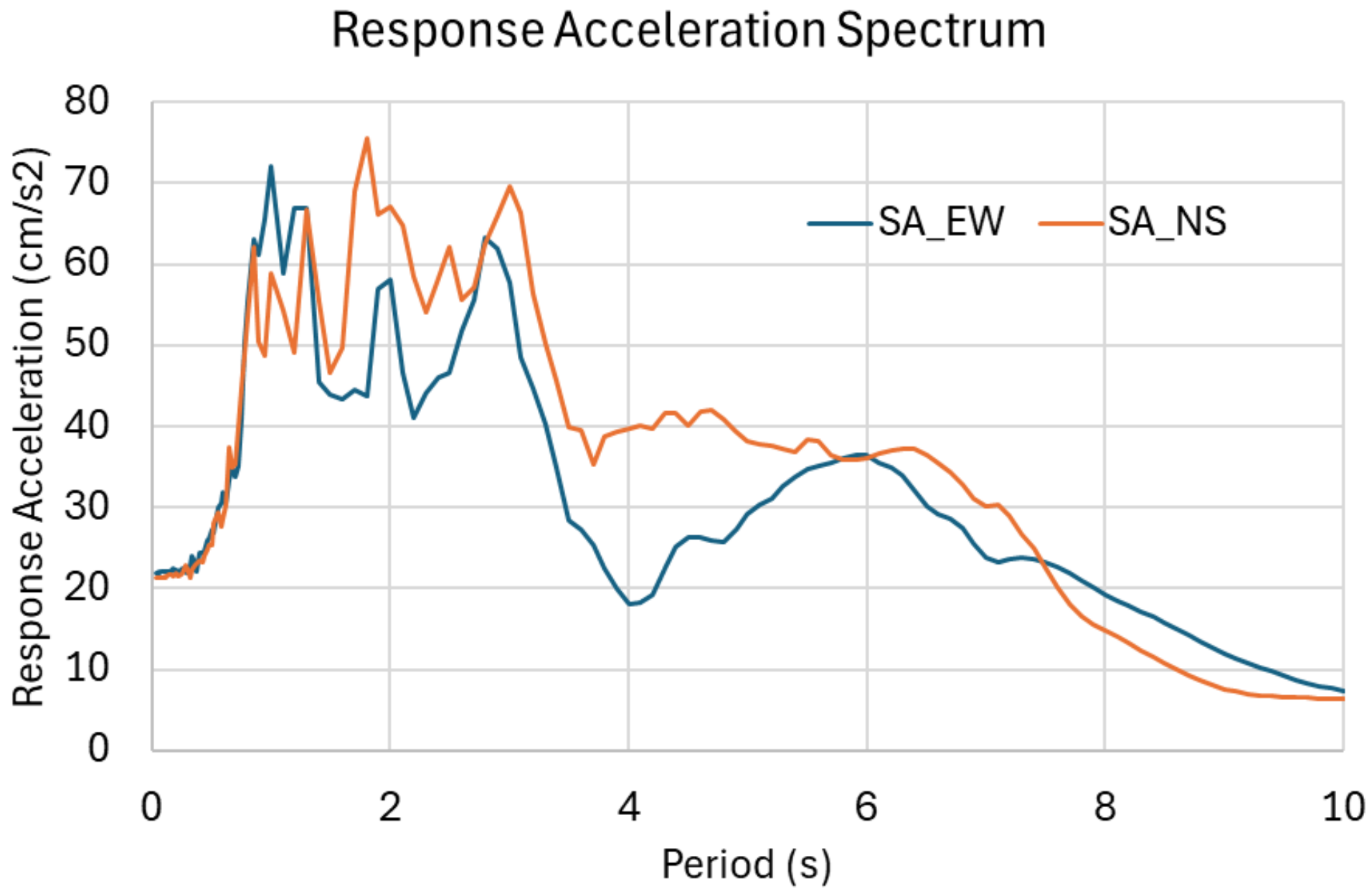
Velocity Time History



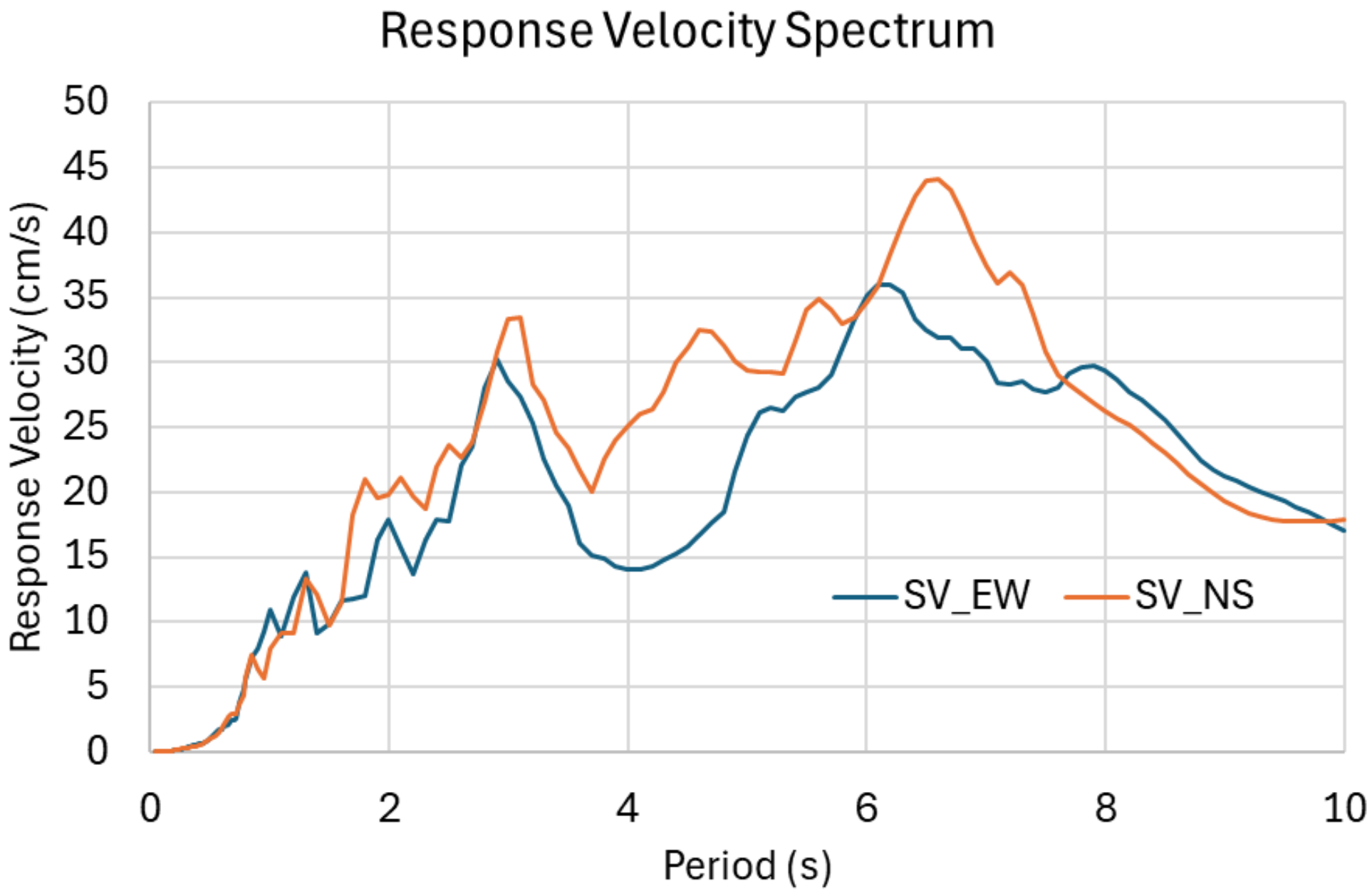
Displacement Time History



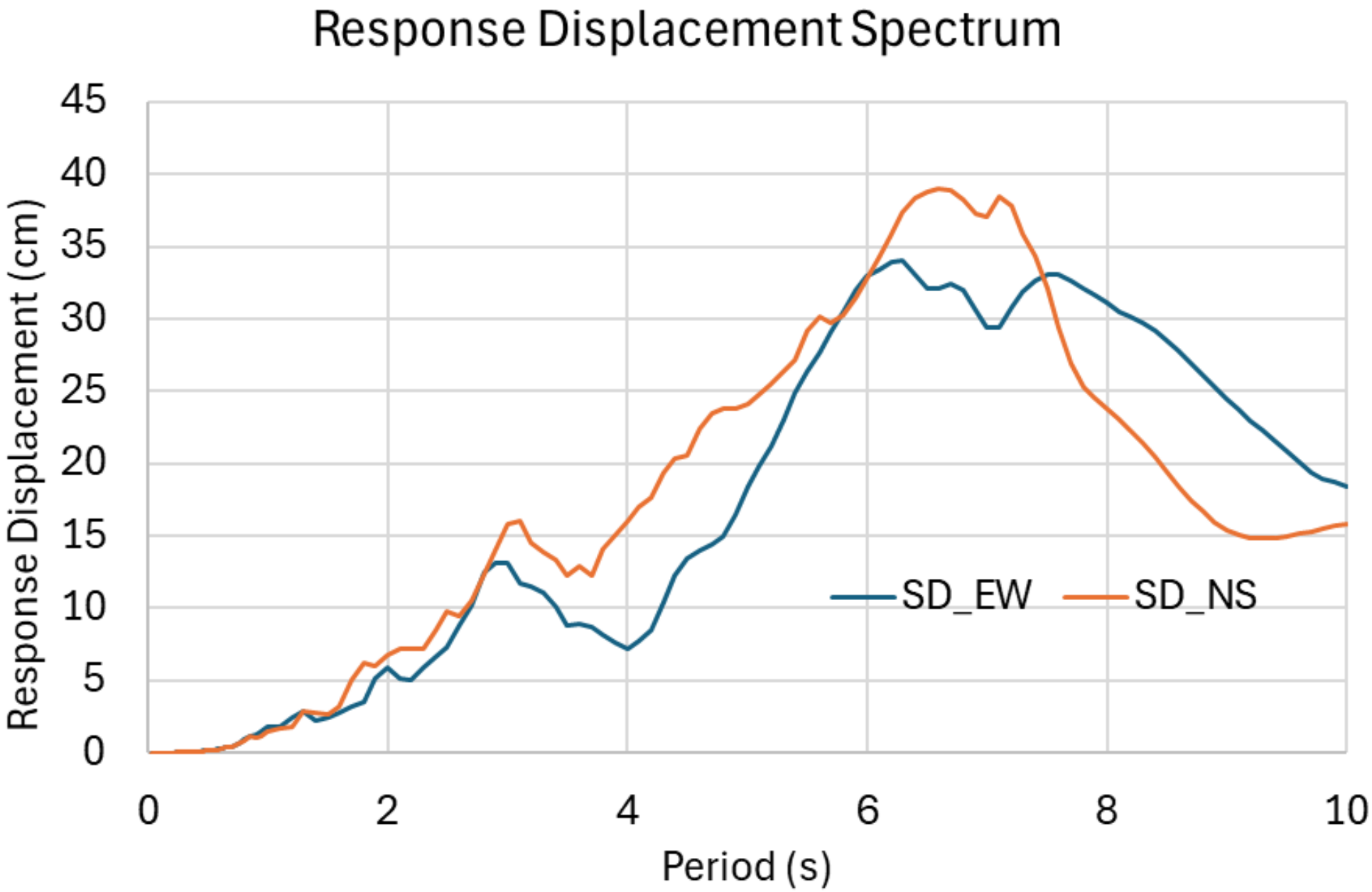
Acceleration Response Spectrum (h=0.05)



Velocity Response Spectrum (h=0.05)



Displacement Response Spectrum (h=0.05)



Seismic Indices

PGA (cm/s²)		
EW	NS	UD
21.5	21.7	8.1

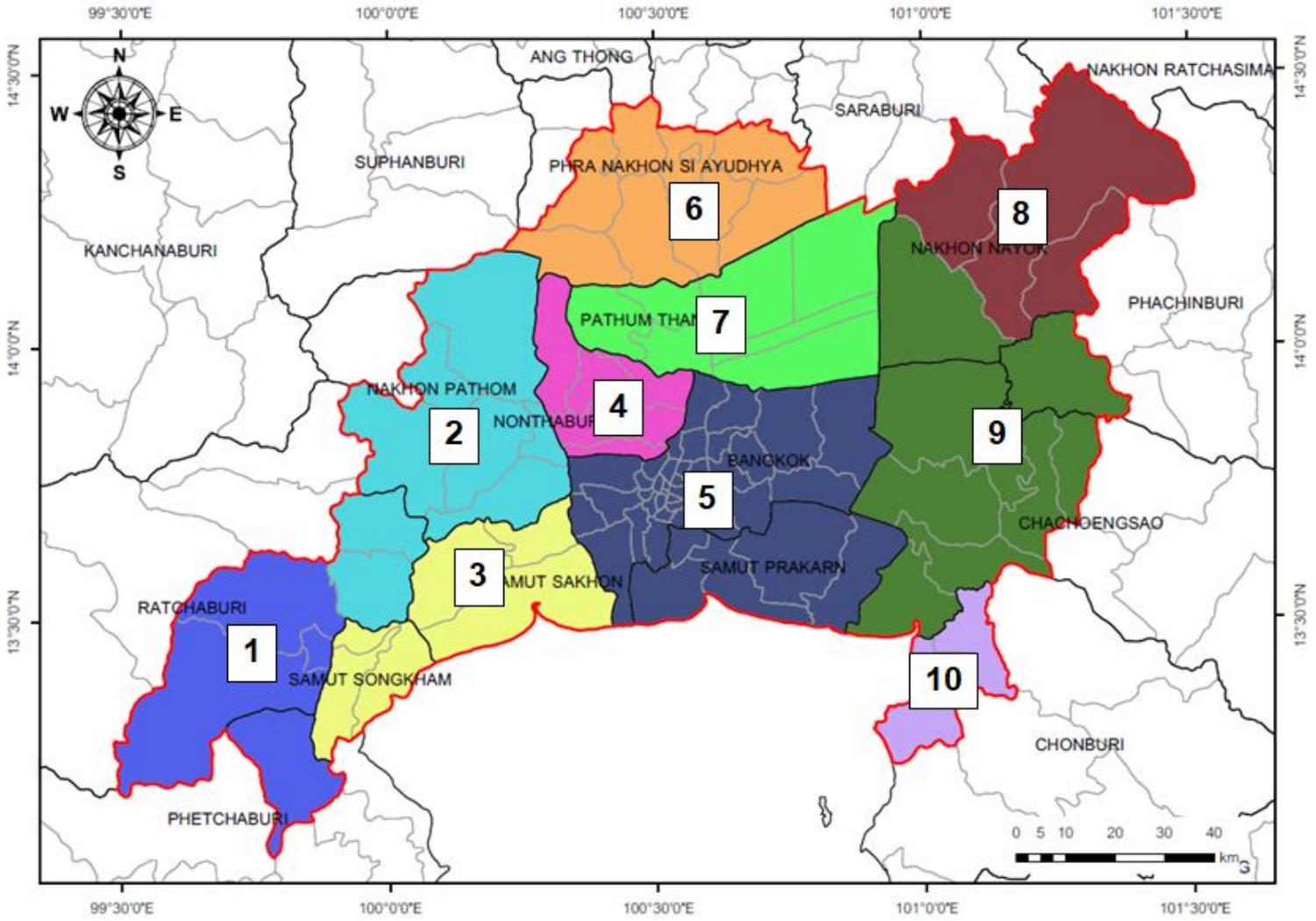
PGV (cm/s)		
EW	NS	UD
8.4	12.2	3.7

PGD (cm)		
EW	NS	UD
6.6	9.4	2.4

JMA Seismic Intensity Scale
4 (3.6)

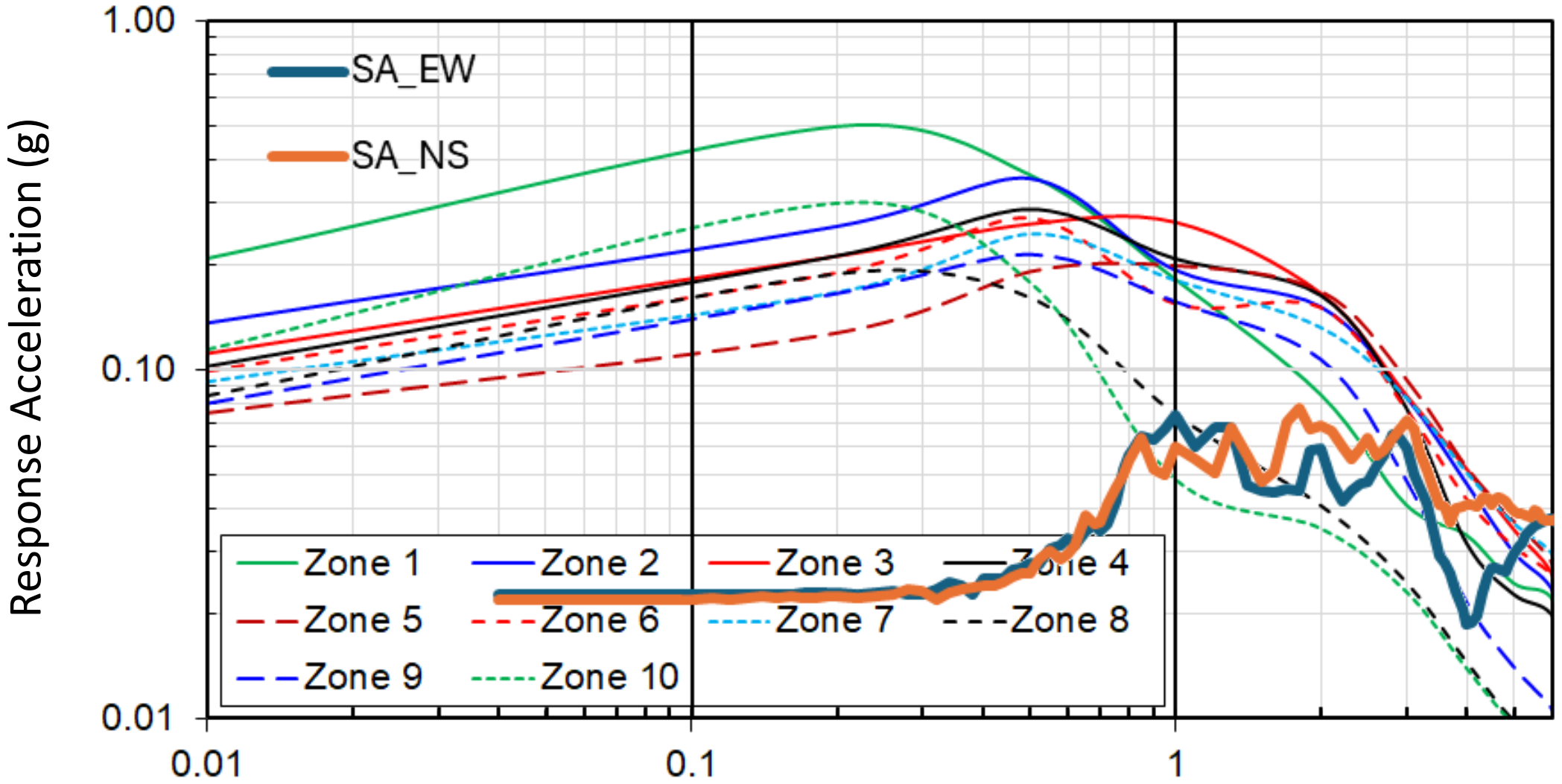
JMA Long-period ground motion intensity class
Class 2
Moderate swaying; may cause fear in upper floors

Microzonation Map for the Design Spectrum in Bangkok



Nakhorn, et al. (2018): A new earthquake resistant design standard for buildings in Thailand, Proceedings of The 7th Asia Conference on Earthquake Engineering

Comparison of the Acceleration Response Spectra at KMUA (h=0.05) with the Design Spectra



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