

[EJ] Evening Poster | S (Solid Earth Sciences) | S-SS Seismology

## [S-SS10]Seismic wave propagation: Theory and Application

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Seismic wave propagation provides rich information of earth's heterogeneities and the excitation sources. In order to extract the information, integrated studies are needed among mathematical/numerical studies based on the wave theory, miniature physical experiments using rock specimens, and practical data analyses.

Furthermore, it is greatly beneficial to conduct comparative studies of various kinds of waves, such as elastic, acoustic, traveling ionospheric disturbances, and oceanic waves. This session widely invites presentations about the theories and applications related to seismic and other geophysical waves.

## [SSS10-P10]The Study of the Seismic Hazard Factors in SW Taiwan by using 3D Ground Motion Simulation: Application in 2016 Meinong Earthquake

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The  $M_L$  6.6 Meinong earthquake occurred in Kaohsiung, Taiwan in February 6, 2016. The major seismic damage was occurred in Tainan area, which including houses collapse and soil liquefaction. Ground motion variability exhibited strong lateral variations owing to the heterogeneous subsurface structure, lower velocity layer and topographic effect. Many factors cause of amplification which include rupture directivity, local structure variation, and wave propagation effects. To study seismic wave field variance and major seismic hazard factors, we examine the variability of the Meinong earthquake ground motion from 3D seismic wave propagation simulation through a set of models with 3D velocity structure, shallow structure (include  $V_{s30}$  and  $Z1.0$ ) and topographic data. The kinematic model of 2016 Meinong earthquake was described in the finite fault source model by using isochron synthetic method. The result shows that the maximum intensity was located in Tainan area, it might cause by the source rupture directivity. In the station of the Western Plain, seismic wave amplification correlates with soft sediment; and the stations on the Western Foothill, the amplification might cause by ray focusing form the asperity and topography. The collective results indicate that the rupture directivity, near-surface soft layer, ray focusing and local topographic effect are most important for amplification. Thus, the 3D ground-motion simulation plays an important role in seismic hazard assessment.