

Seismo-conductivity Anomalies: A case study of the M6.4 Meinong earthquake on Feb. 6, 2016 in Taiwan

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Anomalous phenomena of conductivity enhancements have been repeatedly observed before many earthquakes in Taiwan through orientations of the Parkinson vectors derived from 3-component magnetic data via the magnetic transfer function. Meanwhile, depths of conductivity anomalies can be roughly estimated while the skin effect is conducted into the frequency-dependent parameters of the magnetic transfer function. Locations of seismo-conductivity anomalies are determined by using anomalous orientations of the Parkinson vectors from three magnetic stations. Through the 3-year observation, locations of conductivity enhancements and hypocenters are often comparable that is obtained. The Meinong earthquake with the magnitude of 6.4 occurred in the southern part of Taiwan on Feb. 6 2016. High-conductivity anomalies associated with the M6.4 Earthquake were found in two areas. Anomalies located at the depth of 15 km were observed very close to the main shock on Jan. 31-Feb. 3, 2016. In contrast, the other anomalies at the depth of 30 km on Feb. 2-Feb. 6, 2016 are located at the northern part of the main shock in agreement with aftershocks.

Keywords: Pre-earthquake anomalous phenomena, Meinong earthquake, Seismo-conductivity anomalies