

# **SOURCE MODELING OF THE 1999 TAIWAN (CHI-CHI) EARTHQUAKE DERIVED FROM GEOMAGNETIC INDUCTION VECTORS**

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We modeled the source field of the 1999 Taiwan Chi-Chi earthquake ( $M_w 7.6$ ) using the geomagnetic data at Luning (LNP), Taiwan, Geomagnetic Observatory situated 100 km from the epicenter. This large inland thrust earthquake produced a surface break more than 80 km long along the Chelungpu fault. First, we developed a 3D model consistent with the surface rupture and the focal depth data. Next, we applied the finite difference method for the 3-D case to construct the theoretic induction arrows. The forward results were compared to the observed one at LNP station. The optimum model was set finally when the variance between the theoretic and observed data is small enough. We find that the source dimension is about 30 x 30 x 80 km<sup>3</sup>.

Induction arrow, Geomagnetic field, Chi-Chi Earthquake

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