

## عنوان مقاله:

Proposal of Spectral Directivity Amplification Factor Using Strong-Motion Records of the 1999 Chi-Chi, Taiwan Earthquake

## محل انتشار:

چهارمین کنفرانس بین المللی زلزله شناسی و مهندسی زلزله (سال: 1382)

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## خلاصه مقاله:

Near-fault earthquake ground motion can be strongly enhanced relative to more distant sites, due to the proximity to the source and the presence of directivity effects caused by coherent, long-period velocity pulses. Realistic capturing and modeling of near-source strong motion records is complicated by many factors such as geometry and style –of faulting, local soil conditions, 3D basin effects, large attenuation, topographic relief, and strong underground heterogeneity. Rapid development of strong-motion instrumentations results in more accurate and efficient modeling of these important features. The 1999 Chi-Chi, Taiwan earthquake with a moment magnitude of 7.6 provides the largest acceleration data set recorded by the Seismological Center of the Central Weather Bureau of Taiwan (CWB). In this study the attenuation characteristics of the hanging wall and the footwall regions are examined. Then a period dependent, empirical, spectral amplitude factor model representing the directivity effects for the dip-slip faulting system is developed. The proposed model shows a larger spectral amplification ratio than the previous study result by Somerville et al. 1997. During the Chi-Chi earthquake, the maximum spectral directivity factors have been registered in the up-dip region around the surface exposure of the Chelungpu fault. Since the proposed spectral directivity factor is a magnitude-and distance-independent, it can be easily implemented into attenuation relations, seismic hazard assessment, and building code revision studies for the regions with a dip-slip faulting.

## کلمات کلیدی:

لینک ثابت مقاله در پایگاه سیویلیکا:

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