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遠地 P 波の最大変位振幅と高周波震動継続時間の比とスローネスパラメターの比較
Comparison of the ratio of maximum displacement amplitude to HFER duration to the slowness parameter

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Hara (2007, EPS, 59, 561-565) suggested a possibility to distinguish tsunami earthquakes using the ratio of the contribution of the maximum displacement amplitude (with distance correction) in the magnitude formula of Hara (2007, EPS, 59, 227-231) to that of high frequency energy radiation (HFER) duration. In this study, we calculate common logarithms of ratios of maximum displacement amplitudes of teleseismic P waves (with distance correction) to their HFER durations for a set of large shallow earthquakes. Then, we compare them to the slowness parameters, which are defined by common logarithms of ratios of radiated seismic energy to seismic moment (Newman and Okal, 1998, JGR, 103, 26,885-26,898), determined by Newman and Okal (1998), Lomax et al. (2007, GJI, 170, 1195-1209), and Lomax and Michelini (2009, GJI, 176, 200-214). We find a good correlation between these two ratios. Since the slowness parameter is demonstrated to be effective to identify tsunami earthquakes (i.e., the slowness parameter is deficient for tsunami earthquakes), the ratio of the maximum displacement amplitude to its HFER duration for teleseismic P waves is useful to distinguish tsunami earthquakes.

キーワード: 高周波震動継続時間, 津波地震, スローネスパラメター
Keywords: high frequency energy radiation duration, tsunami earthquake, slowness parameter