

Interactive comment on “A Procedure to Select Earthquake Time Histories for Deterministic Seismic Hazard Analysis: Case Studies of Major Cities in Taiwan” by Duruo Huang and Wenqi Du

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The discussion paper presents a general method to select ground motion time histories in Taiwan region. The findings and results presented through this study may have the potential to be of high impact for the study region. I have some comments provided as follows:

1. I recommend removing the term "site-specific" appears many times in the manuscript (e.g. Page 8, Line 201). The term implies consideration of local site conditions. However, for all cases the authors used a single ground motion prediction relationship. The term "site-specific" in Taiwan may include quite different geological conditions, such as, alluvium filled basin (Taipei and Ilan basin); thick Quaternary

strata (Chianan Plain); relatively stiff soils in extended hilly areas (northwestern part of the Island). Moreover, the upper part of the deposits may be characterized by large spatial variations of thickness and geotechnical characteristics (e.g. Taipei basin). Thus, to my mind, it would be better to construct target response spectra using semi-empirical approach, i.e. applying stochastic simulation based on spectral seismological models together with corresponding site amplifications.

2. The strong motion duration, Arias intensity and other parameters are also important and should be considered in ground motion selecting for engineering practices in Taiwan. These criteria can be found in some standards (ASCE 4-98, ASCE/SEI 43-05, NRC/RG 1.208, . . .). It is recommended to show these parameters in the selection process for the selected records.

3. lines 214-235. The “Chi-Chi Earthquake’s motions are not selected” section is not relevant with this study and thus it should be removed. Besides, the “basin effect” paragraph is very confusing. In other words, it is not understandable how the basin effect in the calculation chain is introduced and how the geographical distribution of these basins is considered. Please clarify it.

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