

# Updated TEM seismogenic structure database: issues and challenges

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Since the establishment of the Taiwan Earthquake Model (TEM) project, we have been working on constructing a complete seismogenic structure database to understand the seismogenic structure source models for Taiwan. A preliminary database has already been released and published earlier in 2016 (Shyu *et al.*, 2016). However, this preliminary database includes primarily on-land structures. For offshore structures that also pose significant seismic hazards, we have yet included them in the first version of the TEM seismogenic structure database.

Therefore, we have been working on updating the TEM seismogenic structure database, in the effort to obtain sufficient data for offshore structures. In addition, based on historical earthquake events, we have also been working on proposing earthquake scenarios that involve ruptures of multiple structures, or only partial segments of a given seismogenic structure. A major structure that has been proposed in other studies along the coast of southeastern China is also added in the new version of TEM seismogenic structure database. These new considerations and additions, however, created new challenges for the construction of the database. For example, many parameters, especially the long-term slip rates, of the offshore structures are extremely difficult to determine. The proposed frequency of multi-structure or segmented rupture events would also significantly influence the recurrence interval calculation. We suggest that these issues and challenges will constitute the next most important questions to be solved for future seismic hazard assessment studies.

## References

Shyu, J.B.H., Chuang, Y.-R., Chen, Y.-L., Lee, Y.-R. and Cheng, C.-T. (2016), A new on-land seismogenic structure source database by the Taiwan Earthquake Model (TEM) project for seismic hazard analysis of Taiwan. *Terr. Atmos. Ocean. Sci.*, 27, 311-323.