

Inclusion of 3rd party models and the expert elicitation process

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ABSTRACT

Geoscience Australia (GA) is currently revising the National Seismic Hazard Assessment (NSHA), due to be completed by October 2017. Through this process, GA is soliciting members of the Australian seismological community to contribute alternative seismic source models that will be considered as inputs to the updated Australian NSHA. This process not only allows for the inclusion of uncertainty in the hazard model in a more comprehensive and transparent manner, but also gives the community as a whole ownership of the final model. The 3rd party source models will be assessed through an expert elicitation process using a method known as Cooke's Classical Method. This method weighs the opinion of each expert based on their knowledge and ability to judge relevant uncertainties, which is determined based on the experts' responses to a set of carefully considered seed questions. Source model proponents will have the ability to present and discuss their models among the experts. Each expert will subsequently consider the strengths and weaknesses of a given model and assign it a weight. The expert elicitation method is particularly powerful where there is no one clear answer, but there are a range of alternative models and opinions that can be scientifically defended. Particular aspects of the seismic source characterisation, and other components of the hazard model, that will be considered as part of the elicitation process will include (but are not limited to): area and fault source models and how they are combined; smoothed seismicity models; earthquake catalogues and magnitudes; magnitude conversions; type of magnitude-frequency distribution, and; ground-motion models.