

Foreword

As members of the GEM Seismic Hazard Advisory Panel, we had the opportunity to review draft versions of both this document and other reports produced by the GEM Seismic Hazard Team, as well as participating in a 3-day meeting with the Team at the GEM Foundation in Pavia, Italy, from 10-12 September 2014.

The OpenQuake (OQ) hazard-engine is a powerful state-of-the-art software for the calculation of ground shaking seismic hazard, which serves multiple objectives including site-specific probabilistic seismic hazard analysis (PSHA) and seismic hazard mapping, as well as providing input to scenario-based loss estimation and probabilistic risk analysis for portfolios of exposure.

The development of the OQ hazard-engine, by a small but highly capable and enthusiastic team, follows a very rigorous unit-testing and QA process that ensures the reliability of the resulting code. Another highly commendable feature of the OQ hazard-engine is that it is genuinely open-source software, providing full transparency in the hazard calculations. We believe and hope that this will set new standards for the development of openly-available software for the analysis of natural hazards. Also noteworthy is that the OQ hazard-engine development procedures have included extensive exercises in which hazard results obtained with other PSHA software have been reproduced, demonstrating the capabilities of the OQ software.

The version of the OQ hazard-engine described in this document is an impressive implementation of the current state-of-the-art in this field. Inevitably, it is also a snapshot of its ongoing development, and new features will and should be added continuously, reflecting the ever evolving state-of-the-art in PSHA. We believe that the release of the OQ hazard-engine to the wider seismological and engineering communities will contribute to an improvement in the practice of seismic hazard analysis. We congratulate the Seismic Hazard Team, and the GEM Project, for this achievement.



Paolo Bazzurro

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Chairman



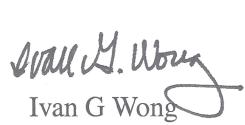
Roger MW Musson



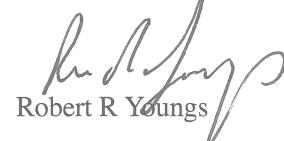
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