Central America: Resis II (2010)

The Resis II PSHA model has been developed in the framework of a collaboration between the Norway Cooperation Agency (NORAD), Spain and representatives of several Central American countries: Costa Rica, Guatemala, Honduras, Nicaragua, El Salvador, Panamá.

Data

Earthquake catalogues

The catalogs used to create the Resis II PSHA input model are the following:

1. Rojas et al. (1993)
2. Information gathered in the CASC (Centro de Sismológico de America central) database
3. National catalogs of Guatemala, El Salvador, Honduras, Nicaragua, Costa Rica, and Panamá.

The final catalog contains 29,918 events with Mw > 3.5 (see Benito et al. (2012) page 506).

Active fault database

The Resis II model doesn't contain fault sources. According to Benito et al. (2012) and Benito and Torres (2009) no database has been crated in the framework of this project.

Ground motion prediction equations

Participants to the Resis II project created a database of strong ground motion recordings. This database contains recordings with the following characteristics:

1. Moment magnitude between 4.0 and 7.7 and 2000 < = year < = 2007
2. 1 < = Repi < = 480km
3. 1 < = Hypocentral depth < = 200km

The ground motion prediction equations used for the calculation of hazard

PSHA input model building methodology

Catalogue compilation

The catalogue has been compiled by merging the information included in a large set of local catalogues. No specific description is provided about the criteria adopted for merging the catalogues.

Catalogue processing

- *Declustering*: details about the methodology adopted aren't available in the documentation although Benito et al. (2012, page 506) write that the filtering of aftershocks and foreshocks was completed after the analysis of completeness.
- *Completeness* analysis: performed using the Stepp (1973) method.
- *Calculation of activity rates*:

Modelling of distributed seismicity

- Area sources
- Smoothing

Faults

- Methodology for activity rate definition

Ground Motion Prediction Equations

Selection Criteria

Models

The selected models for the subduction intraslab sources are the following (see Figure 6 in Benito et al., 2012):

- Youngs et al. (1997)
- Zhao et al. (2006)

The selected models for the subduction interface sources are the following:

- Youngs et al. (1997)

The selected models for the crustal sources are the following:

- Climent et al. (1994)
- Zhao et al. (2006)

Modelling epistemic uncertainties

PSHA Calculation

- Original software adopted

Bibliography

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