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MPS16: towards the updated Italian seismic hazard model

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Ten years after the adoption of the Italian reference seismic hazard model (http://zonesismiche.mi.ingv.it; Stucchi et al., 2011) as criterion for seismic zones definition and seven years after its adoption by the building code, a large project for updating the model is close to the conclusion.
In 2013, the INGV (National Institute of Geophysics and Volcanology) established the Seismic Hazard Center (Centro Pericolosità Sismica – CPS; https://ingvcps.wordpress.com/) for the coordination of its research activities in the field of seismic hazard, especially of those activities with strong application in civil protection and seismic risk reduction.
At the beginning of 2015, the Italian Civil Protection Department asked to CPS to start a large national project, involving the scientific community, with the aim of producing a new reference hazard model, relevant for seismic zoning and seismic code.
The CPS designed a roadmap for releasing within 2 years a deeply renewed model, with regard both to updated input elements and to the strategies to be followed, according to the most advanced procedures adopted worldwide and in order to obtain a shared and largely accepted probabilistic seismic hazard assessment. The main requirements of the model were discussed in meetings with experts on earthquake engineering which will participate to the revision of the building code.
The scientific community was involved through a public call; 24 proposals were submitted from many national institutions and only 2 were rejected being not properly consistent with the call. Activities were organized in 6 tasks: project coordination, input data, seismicity models, ground motion predictive equations, computation and rendering, model validation.
The input data task selected and provided the most updated information about seismicity (historical and instrumental catalogues), seismogenic faults, deformation (both from seismicity and geodetic data) and so on. Seismicity models were elaborated in terms of area sources, fault sources and gridded seismicity based on different approaches. About ground motion predictive equations, the most recent models were selected and their performance evaluated with respect to available recorded data to derive the preliminary weights in the logic tree structure. Lastly, the validation task is in charge of comparing the hazard models obtained by single branches of the logic tree retrospectively with the available data in order to best tune the weights and to obtain a robust model.
The main still preliminary results, the open issues and the final operating choices will be presented and discussed.