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Seismic hazard map of Austria

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After 25 years, a new seismic hazard map for Austria was created. The improvements in the Probabilistic Seismic Hazard Assessment (PSHA) are based on expanded and updated catalog data with improved depth, source-mechanism and moment magnitudes. Locally adapted ground motion prediction equations (GMPE) were calculated by applying a least square adjustment to the local measurements. A neuronal networks approach was successfully tested. The final selection is carried out by using statistical parameters, like Log-Likelihood and Euclidean Distance Range. Verified calculation methods, like Bayesian Penalized Maximum Likelihood and modified Gutenberg Richter, were used. The uncertainties have been considered by using the covariance matrix according to Stromeyer (2015). The PSHA approach combines a model of seismic zones (area sources), which is composed of zones and superzones, a zone-free model (smoothed seismicity) and a model with geological fault zones. A logic tree function was used to merge the models, the maximum magnitudes (by EPRI-Approach) and the GMPE. The calculations were carried out with the Openquake software framework. The results were compared with the current norm and the results of neighboring countries. Furthermore, the uniform hazard spectra were compared with the new Eurocode draft.