

## **Estimation of the b-value in the magnitude-frequency relationship for the territory of Slovakia**

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**Abstract:** The map of seismic hazard in the Slovak technical standard (Slovak building code) has to be replaced as soon as possible. The need to upgrade the seismic hazard evaluation to the level consistent with the Eurocode 8 has been recently enhanced by the requirement of the Slovak Standards Institute. The development of the new map is a subject of the contract between the Slovak Standards Institute and Geophysical Institute, Slovak Academy of Sciences.

The process of development of the new map begins with evaluation of the existing earthquake database, definition of the source zones and determination of the magnitude-frequency relationships. We present results of this effort.

First we present compilation and homogenization of the catalogue. We continue with definition of the seismic source zones. The entire territory of Slovakia is covered by the source zones, that is, no background zones are recognized. The next step is the estimation of the database completeness with respect to the magnitude intervals. Finally, the magnitude-frequency relationships for the defined seismic source zones are determined using the

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maximum likelihood method.

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