



A review of the 1590 earthquake in Lower Austria and its effects on Vienna

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The project “Historical Earthquakes in Lower Austria” serves to complete the Austrian Earthquake Catalogue to gain a better image in terms of seismic hazard.

The project aims at the investigation of: - so far unknown earthquakes, - fake quakes, and - the correction of false catalogue entries.

To improve the seismic hazard assessment in Lower Austria the project focuses mainly on the research of gaps and the restudy of the most important historical earthquakes in the area like the damaging Neulengbach earthquake of 16 September 1590 with the epicentral intensity $I_0=9$ EMS (Hammerl, Ch., 2007. „Die khirchen dermassen zerschmetert und zerlittert, das man nit darein darf. . .“ – Historische Erdbebenforschung in Niederösterreich. Studien und Forschungen aus dem Niederösterreichischen Institut für Landeskunde, 46, 21-44).

The results of the project among others – the translation, the interpretation and the documentation of the original sources, the intensity estimation for each place (IDPs – intensity data points) is shown for the example of Neulengbach.

The question where the actual earthquake occurred can only be tentatively answered. However, when comparing historical reports of local damage with the gravity field in Lower Austria in the vicinity of Neulengbach points towards a flat dipping and N-S-striking thrust fault (Lenhardt, W.A. et al., 2007. Seismic activity of the Alpine-Carpathian-Bohemian Massif region with regard to geological and potential field data. *Geologica Carpathica*, 58, 397-412). Such a mechanism would explain the reconstructed historical pattern damage.