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Evropský fond pro regionální rozvoj

AT-CZ 167

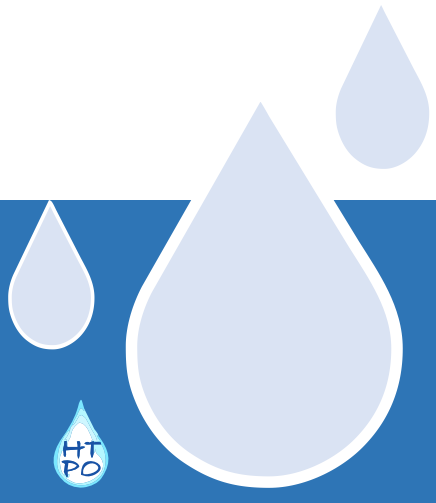
HTPO

„Hydrotermální potenciál oblasti / Hydrothermales Gebietspotential“

Output T1.2.1

RECORDS OF HISTORICAL EARTHQUAKES

December 2021



Co-financed by the European Regional Development Fund

This report was written during the project "HTPO – Hydrothermal Potential of the Area “Laa an der Thaya-Pasohlávky”. Inserting into the project structure is shown in the following table:

WP T1	„Geovědní model výskytu termálních vod v oblasti Laa - Pasohlávky“	„Geowissenschaftliches Modell der Thermalwasservorkommen Laa - Pasohlávky“
Akt. T1.2	„Historický výzkum zemětřesení a seismologický popis oblasti Laa - Pasohlávky“	„Historische Erdbebenforschung und seismologische Beschreibung der Region Laa – Pasohlávky“
T1.2.1	**„Evidence historických zemětřesení“**	**„Erfassung der historischen Erdbeben“**

More information and other outputs on the project "HTPO – Hydrothermal potential of the area" Laa an der Thaya-Pasohlávky" can be found at:

https://www.at-cz.eu/cz/ibox/po-2-zivotni-prostredi-a-zdroje/atcz167_htpo

https://www.at-cz.eu/at/ibox/pa-2-umwelt-und-ressourcen/atcz167_htpo

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T1.2.1 RECORDS OF HISTORICAL EARTHQUAKES

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Within the framework of WP T.1.2 Historical earthquake research and seismological description of the region Laa an der Thaya - Pasohlávky, under WP T.1.2.1, earthquakes, starting with the year 1500, were investigated cross-border by the Institute of Physics of the Earth, Masaryk University (IPE/MUNI) and by the Earthquake Service of the Central Institute for Meteorology and Geodynamics/Zentralanstalt für Meteorologie und Geodynamik (ZAMG) and listed in the new earthquake catalogue. A circle with a radius of 120 km and the centre of the circle between Laa an der Thaya/Austria and Pasohlávky/Czech Republic (48.811° N 16.460° E) was defined as the project-relevant region in order to better describe the possible activity of individual faults and the effects of more distant earthquakes on the Laa an der Thaya/Pasohlávky region.

The catalogue consists of two parts, historical (1500-1999) and instrumental (2000-2017). The methods used to compile them are fundamentally different.

The historical part of the catalogue contains earthquakes felt by people whose observations were written down. The compilation of this part of the catalogue consisted in the study of historical sources, chronicles, older catalogues, articles, letters, etc. and in the careful interpretation of the information found in them. The year 1500 was chosen as the beginning of the study period, because from this time on more reliable sources of information for the estimation of a historical earthquake can be expected in the archives.

The turning point in 2000 was chosen because, although there were already several seismic stations in the 20th century, their number did not increase significantly until the end of the millennium, and from that time onwards, above all, the exchange of station data between the various institutions started, which significantly increased the accuracy in the evaluation of the data and consequently in the parameter determination of the earthquakes. The data for compilation of the instrumental catalogue 2000-2017 has been adopted from all available sources to ensure the best coverage of the area of interest. These were mainly Austrian catalogues produced by ZAMG and Czech catalogues produced by the IPE/MUNI. We also collected data from the Institute of Geophysics, at the Academy of Sciences, Prague (GFU), the Slovak catalogues by the Slovak Academy of Sciences (SAV) and the Hungarian catalogue by Georisk (GEORISK). All these catalogues were merged and the data was analysed in great detail. Suspicious events (possible explosions, mislocation) or incorrectly identified events were either newly located or excluded.

Co-financed by the European Regional Development Fund

SOURCES USED:

ZAMG: Austrian Earthquake Catalogue, 2021. Seismological Service of the Zentralanstalt für Meteorologie und Geodynamik (ZAMG), Vienna, Austria.

IPE: Catalogue of earthquakes, 2021. Institute of Physics of the Earth (IPE), Masaryk University, Brno, Czech Republic.

SAV - historical: Labák P., Catalogue of macroseismically observed earthquakes on the territory of Slovakia (version 2001, in Slovak). Geophys. Inst. Slov. Acad. Sci. Bratislava 15.

SAV – instrumental: Local earthquakes. Locations from Slovak National Network of Seismic Stations. Online: https://www.seismology.sk/Local_Earthquakes/

GFU: Catalogs of regional seismic events recorded by the Czech Regional Seismological Network. Online: http://www.czechgeo.cz/en/gfu-catalog/

GEORISK: Hungarian Earthquake Bulletin 1995-2020. Online: http://www.georisk.hu/

ISC: International Seismological Centre (20XX), On-line Bulletin, https://doi.org/10.31905/D808B830

DESCRIPTION OF THE HISTORICAL CATALOGUE 1500-1999:

YYYY **MM** **DD** **hh** **mm** **ss**	year month day hour minute second	origin time
Lat **Lon**	latitude (° N) longitude (° E)	epicentre coordinates
Depth	focal depth (km) * estimate depth	
M	magnitude * magnitude derived from intensity I_0	
I_0	epicentral intensity * intensity derived from magnitude	
Place	name of the epicentral area	
Country	AT - Austria, CZ - Czech Republic, SK - Slovakia, HU - Hungary	
Source	source catalogue	
Dist HTPO	distance from the centre of the project region (48.811° N, 16.460° E)	

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DESCRIPTION OF THE INSTRUMENTAL CATALOGUE 2000 - 2017:

YYYY **MM** **DD** **hh** **mm** **ss**	year month day hour minute second	origin time
Lat **Lon**	latitude (° N) longitude (° E)	epicentre coordinates
Depth	focal depth (km)	
ML	local magnitude	
I_0	epicentral intensity	
Country	AT - Austria, CZ - Czech Republic, SK - Slovakia, HU - Hungary	
Source	source catalogue	
Dist HTPO	distance from the centre of the project region (48.811° N, 16.460° E)	

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