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Changes of the sinuosity of the Morava River (western Slovakia) and their neotectonic origin

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Channel sinuosity of meandering rivers is a tool to check the valley slope and the river response to the small changes in this dip. In case of the most meandering rivers (and the Morava River is a good example of this), the sinuosity of the thalweg increased with the slope to a point where it was the maximum. This behaviour of the sinuosity is the starting point of geodynamic and neotectonic analyses.

As the study river was partially a subject of water control works in the 19^{th} and 20^{th} centuries, we digitized the thalweg line from the georeferred map sheets of the second military survey of the Habsburg Empire, completed in this region around 1820. This way, we get the digitized form of an undisturbed, natural channel to analyze its sinuosity.

The most important, neotectonically active feature, crossing the river, is the Mur-Mürz-Žilina Line, connecting Eastern Austria and Northwestern Slovakia, responsible for many earthquakes rather its southwestern flank. This line has also a normal fault component and its recent activity is reflected in the sinuosity trend of the natural channel os the Morava River.

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