



River Sinuosity Classification – Case study in the Pannonian Basin

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A new evaluation method is proposed to classify the multiple window-size based sinuosity spectrum, in order to minimize the possible human interpretation error. If the river is long enough for the analysis, the classification could be similarly useful as the sinuosity spectrum is, but sometimes it is more straightforward. Furthermore, for the classification, we did not need the main parameters of the river, e.g. the bankfull discharge.

The river sinuosity values were studied in the Pannonian Basin in order to reveal neotectonic influence on their abrupt changes. The map sheets of the Second Military Survey of the Habsburg Empire were used to digitize the natural, pre-regulation meandering river thalwegs. 28 rivers were studied, and the connection between the known fault lines and the river sinuosity changes was detected in 36 points, along 26 structural lines.

An unsupervised ISOCLASS classification was carried out on these data, and the sinuosity values were divided into 5 classes. Because of the sinuosity calculation method, 25 kilometer-long river sections are missing at the two endpoints of the channel. So sometimes the displayed section of the river does not cross to the faults represented on the neotectonic map. In the other cases, where the faults are crossing the rivers, the results are corresponding with the results of the sinuosity spectrum: the river-points on the two sides of the faults belong to different classes. The connection between these fault lines and the change of river sinuosity classes was detected in 23 points, along 16 structural lines

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