Geophysical Research Abstracts
Vol. 12, EGU2010-8739-2, 2010
EGU General Assembly 2010

Disconnection of gravel-bed Carpathian rivers (Czech Republic)

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The contribution summarizes existing knowledge of factors of morphodynamic changes in channels and alluvia of Carpathian streams. Main factors causing fluvial system changes in the Moravskoslezské Beskydy Mountains are (dis)connectivity (buffers, barriers and blankets). The identification of the (dis)connectivity was based on the methods of particle size analysis, fluvial-geomorphological mapping and analysis of longitudinal and transversal profile. Detailed geomorphologic mapping brought information on the distribution of the buffers, barriers and blankets in the fluvial system of the Morávka Basin. The river pattern of the downstream part of the Ostravice and the Morávka rivers was analysed by means of historical maps and aerial photographs. The channel changes are related with (i) the land use change in the historic period when the deforestation of mountain areas caused the increase in the amount of bed-load in the streams and influenced the course of flood waves on the streams; (ii) the climate change since the end of the Little Ice Age and (iii) human pressure on the water streams that culminated in the second half of the 20th century with the total transformation of the geomorphologic regime of the streams. The most distinct type of the changes is the transformation of gravel-carrying braiding streams into streams with accelerated deep erosion and bedrock channel development. The research is supported by the Student Grant Competition Project of the University of Ostrava.