

Tomáš GALIA, Václav ŠKARPICH

COARSE BED SEDIMENTS IN A HEADWATER CHANNEL AS INDICATORS OF FLUVIAL PROCESSES AND SLOPE-CHANNEL COUPLING: A CASE STUDY FROM THE CARPATHIAN MOUNTAINS (CZECH REPUBLIC)

The character of riverbed sediments usually reflects fluvial processes and the dynamics of sediment transport in fluvial systems. The approach in this study was based on the measurement of the largest boulders located within a bankfull channel, and on the observation of changes in their size in the longitudinal profile of a headwater stream in the Moravian-Silesian Beskids Mountains. The resulting trends in a particle-size index reflect the character of sediment delivery into channel segments and the recent channel-forming processes. The largest boulders were observed in channel sections with a strong interaction of slope and fluvial processes, and a slight coarsening of sediments was recorded in the incised downstream sections of the longitudinal stream profile. In contrast, the refining of bed sediments was typical of the transitional zone between slope-channel coupled reaches and an alluvial cone characterised by a tendency to material aggradation.

Pavel KLAPKA, Martin ERLEBACH, Ondřej KRÁL, Michal LEHNERT, Tomáš MIČKA

THE FOOTFALL OF SHOPPING CENTRES IN OLOMOUC (CZECH REPUBLIC): AN APPLICATION OF THE GRAVITY MODEL

The issue of the footfall of large retail facilities in the city of Olomouc is treated in this article from the perspective of spatial interaction modelling. A production-constrained gravity model is applied to reveal spatial patterns of shopping travel intensities in the city. Three problems are addressed: the existing pattern and intensities of flows to the shopping centres; the prediction of possible future changes in these patterns and intensities; and inferences about hypothetical sizes of shopping centres according to some defined conditions.

Michal LEHNERT

THE SOIL TEMPERATURE REGIME IN THE URBAN AND SUBURBAN LANDSCAPES OF OLOMOUC, CZECH REPUBLIC

The soil temperature regime is a relevant part of comprehensive topoclimatic research. Soil temperature data series measured at selected stations of the metropolitan station system of Olomouc in 2010–2011 were analysed. The focus was on the identification of geofactors influencing the soil temperature regime in the area of interest. The possibility of soil temperature simulation using knowledge of local specifics of the soil temperature regime was verified. The results indicate that the variability of the soil temperature regime was, apart from physical and chemical properties of soil, determined predominately by the character of the relief and the occurrence of related atmospheric inversions. The impact of the urban landscape on the soil temperature regime was not demonstrated. Average daily soil temperature was simulated with satisfying results, based on a model adjusted for a period without snow cover. The results represent a basis for further research on geofactors influencing the soil temperature regime in Olomouc and its surroundings.

Marie NOVOTNÁ, Jiří PREIS, Jan KOPP, Michael BARTOŠ

CHANGES IN MIGRATION TO RURAL REGIONS IN THE CZECH REPUBLIC: POSITION AND PERSPECTIVES

Migration trends in the Czech Republic after 1990 are discussed in this paper. To evaluate the migration trends, the databases of immigrants and emigrants from the Czech Statistical Office from 1990 to 2010, are used. While migration from rural areas to urban areas prevailed in the past, after 1990 the direction changed: the population in rural areas with good natural and socio-cultural environments has been increasing due to migration. Small municipalities have a positive migration balance. We can conclude that these trends could be influenced primarily by social and environmental problems in cities, the increase in automobile use and the development of communication technologies, the migration of pensioners who settle in second homes, and the changing residential preferences of people and entrepreneurs.