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THE DYNAMICS OF THE RAINFALL – RUNOFF RELATIONS
IN THE BIAŁA WODA AND CZARNA WODA STREAMS
IN THE HYDROLOGICAL YEAR 2010

Key words: precipitation, small catchment, The Pieniny Mts., water outflows

Summary

This paper concerns the relations between the amount of precipitation and the dynamics of surface water runoff from small mountain catchments. We analysed two well-identified sub-basins of streams: Biała and Czarna Woda. Both are spring inflows to the Grajcerek stream which is a right-bank tributary of the Dunajec River. For a detailed diagnosis of the rainfall – runoff relationship the hydrological year 2010 was selected. In this year total rainfall recorded at the weather station at Jaworki (Small Pieniny, 600 m a.s.l.) exceeded 1602 mm while in the summer season the rainfall exceeded 1202 mm. In these meteorological conditions high flows and very high average unit outflows were recorded, which in the hydrological year 2010 ranged from 29.3 to 32.0 dm$^3$·s$^{-1}$·km$^{-2}$. Relational analysis showed that during long and intensive precipitation forests and grasslands acted as a protection for shallow mountain soils. However, vegetation cover and soil did not have any clear influence on the differences between outflows. Under such weather conditions the effect of land use is smaller, mainly as a result of specific retention capacity of soils.