

Daily precipitation totals variability in Poland (1951-2000)

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It has been reported in many studies that surface precipitation has increased in the mid to high latitudes over the last century. An increase of 10–50% has been observed over northern and western Europe (Watson *et al.*, 1998). In Poland a slight increase of precipitation totals can be observed but it doesn't exceed the level of significance (Kozuchowski, 2004). This study is focused on variations in daily precipitation totals and their relation to circulation indices.

The daily precipitation totals from five stations in Poland: Szczecin in the north-west, Suwalki in the north-east, Przemyśl in the south-east, Wrocław in the south-west and Lodz in the centre of Poland from the period 1951-2000 were used. On that ground for each year the number of days with precipitation, the greatest daily total and the 1, 5, 10, 25, 50, 75, 90, 95, 99 percentiles for all days with measurable precipitation (> 0.0) were found. The linear trend of all these indices were calculated. A statistically significant increase in the number of days with precipitation and statistically significant decrease of the 5, 10 and 25 percentiles were found. At some stations there is a statistically significant decrease of upper percentiles (90, 95 and 99). Together with the lack of trend in annual totals it means that in Poland the frequency of precipitation has increased but the intensity of precipitation has decreased. The frequencies of dry and wet spell of different length were also analyzed and their relation to temperature and selected circulation indices was established.

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Kozuchowski K, *Variation of atmospheric precipitation in Poland in the 20th and 21st century*, [in:] *Scale conditions and perspectives of the contemporary climatic changes in Poland*, Lodz, 2004.

Watson RT, Zinyowera MC, Moss RH (eds). 1998. *The Regional Impacts of Climate Change: An Assessment of Vulnerability*. Cambridge University Press: Cambridge UK.