



Recent climatic changes and relation to weather patterns in a trans-boundary mountainous region in Central Europe

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A comprehensive regional assessment of observed and projected climatic changes was recently published by the German-Czech climate cooperation INTERKLIM. The study area comprises a region characterised by orographic and scenic, thus climatic diversity. This contribution presents observed changes of temperature and precipitation means and extremes within the past 50 years – using measured values and a range of climate indices – and how they were regionally shaped by variations in the frequency of weather patterns. A major project achievement was the visualisation of regional specifications of certain weather patterns, allowing for very local interpretations of general climatic characteristics and specific extreme events.

Mean and extreme temperatures showed increasing trends year-round besides autumn. That change was more pronounced for climate indices representing warm than cold conditions. Precipitation trends showed regionally varying signals, yet a distinctive decrease from April to June (early vegetation period – VP1) and a strong increase from July to September (late vegetation period – VP2). Despite a general annual precipitation increase the amount of dry spells rose in some eastern regions. The mentioned changes are well explainable by frequency changes of weather patterns. The drying in VP1, for instance, was related to a decrease/increase in patterns responsible for rather wet/dry conditions, while in VP2 the opposite trends were observed. Results serve as valuable examples of regional climatic changes in a complex topography and their dependency on variations in atmospheric circulation peculiarities.