

Previous and future changes of human-biometeorological conditions in Poland

The primary objective of the project is the investigation of human-biometeorological conditions in Poland in the period 1966–2020, and the estimation of their previous trends as well as forecasting conditions in the near future (2021–2050) and far future (2071–2100).

The research hypothesis assumes that the progressing climate warming affects the human-biometeorological conditions and their spatial distribution in Poland. This is manifested mainly in increasingly frequent occurrence of conditions described as strong and extreme heat stress, with a simultaneous decrease in the frequency of conditions described as strong and extreme cold stress. It is assumed that, although, the direction of changes may be uniform in the entire study area, the occurring trends may show spatial variability of their intensity.

The result of the implementation of this project will also be detailed determination of changes in human-biometeorological conditions in Poland. An innovative aspect of the planned research will be the determination of changes in future decades based on the latest forecasting models. The obtained results would be precursory, because to date, no such research have been conducted in the proposed area, or even in Central Europe (except for scarce local studies). An important aspect of the study will also be the investigation of the circulation conditions of the occurrence of extreme human-biometeorological conditions that will probably intensify in terms of nuisance for the human organism. Early forecasting of the direction, rate, and particularly of the level of changes will permit planning and undertaking activities aimed at minimising their effects through the optimisation of the warning system, but also the social welfare system, particularly regarding persons for whom extreme human-biometeorological conditions can be dangerous. Due to the high level of threat for society related to the observed climate changes, the presented study results can be useful for a broad and diverse group of recipients.