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Analysis of chosen urban bioclimatic conditions in Upper Silesian Industrial Region, Poland

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Due to the increasing urbanization, people spend more and more time in cities. Because of that fact during the last century the human bioclimatological approach had an important influence on the applied urban bioclimatology.
The aim of the study was to analyze chosen thermal bioclimatic conditions in urban area of Upper Silesian Industrial Region in connection with the atmospheric circulation and air masses.
The study was focused on the thermal conditions that are important for the bioclimatological research on human thermal comfort. They were the basis for making study on how to show the influence of the air masses and circulations types on frequency and variability of the chosen bioclimate indexes. That research was based on data (2004 - 2008) acquired by the Silesian University (Faculty of Earth Sciences) meteorological station located in the city of Sosnowiec (50°17′N, 19°08′E, h=263 m a.s.l.). The temperature measurements were made automatically every 10 minutes on the 2 meters above the ground level. Previous research showed that the station is a good representation of the local urban climate conditions in Upper Silesian Industrial Region. In the study the following air temperatures were taken into consideration: average day temperature, maximum day temperature, minimum day temperature and the average air temperature at 12 UTC. They were associated with atmospheric circulation types and masses typical for the region. Using the data mentioned above I conducted a classification to divide days into following objective categories: cool, cold, comfortable, hot, warm and very hot in the seasonal depiction. The final stage of the work was to find the answer to the following question: “When and how do the strong air masses and air circulations types modify bioclimatic conditions in the study area?” Answer to that question together with further results of the research will be presented on my poster.