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The impact of macroscale meteorological factors on the mesoclimatic structure of the Wieliczka Foothills (Carpathian Foreland)

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The aim of the project is to investigate the combined influence of solar radiation, wind speed and cloudiness on air temperature and humidity in mesoscale, in the Wieliczka Foothills, in areas located in various landforms and with different land use. The relief and land use in the Wieliczka Foothills are relatively stable environmental elements, which permanently modify the mesoclimatic structure. However, the variability of meteorological and climatic conditions may change that structure. The data comes from the Research Station in Gaik-Brzezowa (which belongs to the Institute of Geography and Spatial Management, Jagiellonian University), and from the meteorological station in Dobczyce (which belongs to the national network operated by the Institute of Meteorology and Water Management). Additionally, continuous automatic measurements are carried on. The equations obtained with the multiple regression analysis allow define what role is played by particular macroscale and local elements in controlling air temperature and humidity, depending on the location of a measurement point.