



Variability of bioclimatic and aerosanitary conditions of air in Gdańsk

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Recent knowledge of intensity, frequency and spatial variability of bioclimatic and aerosanitary conditions of air in the urban area, involving interactions of such factors is desirable and can be put to use in design and town planning in order to minimise negative health consequences caused by synergic influence of adverse bioclimatic conditions and poor air quality. In line with such thesis, spatial and temporal characteristic of bioclimatic and aerosanitary conditions within the metropolitan area of Gdansk (Poland) was conducted using the hourly meteorological and immission data from automatic stations network of Agency of Regional Air Quality Monitoring in Gdańsk metropolitan area (ARMAAG) in the period 2005-2010. The assessment of bioclimatic conditions was made with the use of UTCI (Universal Thermal Climate Index) values which provide information on thermal stress. UTCI index was formulated as a result of international cooperation of various research facilities operating within the framework of COST 730, and with the decision of World Meteorological Organisation (WMO) it was introduced and is currently used by the weather service worldwide. UTCI values were calculated using BioKlima ver. 2.6 software. Assessment of air quality was performed with the use of Common Air Quality Index (CAQI), values of which were calculated on the basis of the immission level of the following pollution: NO₂, PM10, O₃, CO and SO₂. In accordance to air quality standards of European Union, the foregoing form of an index was formulated within the framework of CITEAIR project. Particular classes from 1 to 5 were assigned to given values of the index – classes 1-3 mark satisfactory air quality which doesn't constitute a risk for humans.