NEW CHALLENGES IN AIR QUALITY AND CLIMATE MODELING

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Abstract: At present, when high particulate matter (PM) concentrations in ambient air cause thousands of premature deaths in Europe and global climate change is becoming the most critical issue in environmental protection, the state-of-the-science air quality and climate models constitute an essential research as well as decision support tools. Recently the great progress has been achieved in this research area. The present paper presents the goals and tools for Air Quality (AQ) Modeling, and gives overview of current challenges, including the meteorological, chemistry and climate modeling. The main emphasis is given to the regulatory and the Eulerian grid models, the latter are currently operating as so called off-line or on-line modeling systems. The issues connected with model implementation and validation is presented as well. Finally, the conclusions are drawn and recommendations for further development and integration of AQ and climate modeling in Poland are presented.