"STORM MODELING SYSTEM AS ADVANCED TOOL IN PREDICTION AND WARNING OF SEVERE WEATHER RISK"

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Abstract

The Cloud Modelling System (CMS) has been developed during the past years. The main compounds of CMS are state of the art convective cloud model or cloud resolving model as a comprehensive state-of-the-art technique for study and research of the convective scale processes, which occur in the small volume of the atmosphere.

It represents an advanced tool for treatment of the complex storm dynamics, sub-scale turbulence, microphysical and moist processes. This mode demonstrates the capability to simulate the storm initiation, evolution and dissipation on a very realistic way.

The model is very useful in calculation of quantitative rainfall forecast (accumulated rainfall, rainfall duration, intensity) and definition of flash flooding indices and warnings of severe weather risk.

The model has been tested and comparative analysis has been done for many case and sensitivity studies. The modelling results are comparable and coinciding well with observations. The model is running in 2-d and 3-d mode, and many applications have been developed using different subroutines e.g. (cloud seeding for weather modification, air quality, sulphate chemistry, and climate studies).

Many numerical simulations, experiments have been done in the past and several research papers have been published during this period.