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Study of monsoon with the impact of aerosols

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Text of Abstract

The daily progress of southwest monsoon 2007 has been studied using daily SST from PODAAC (o
interpolated) and initial conditions (at 00 GMT) from NCEP (National Centers for Environmental Pre
analyses. It has been noted from a series of 30-day runs of LMDZ that the model predicted monso
conditions well in advance, along with all the major weather events of this region. Thus, it has show
pability to correctly predict the date of monsoon onset over Kerala. The first series of numerical exp
with the model were performed at 128x96x19 resolution. Later on, 16-day runs at 192x145x19 resolut
performed. A limited area resolution model (grid size = 20 km), also derived from LMDZ, has been de
at IIT Delhi, which is being proposed to run along with the global model for studying monsoon b
over major cities of India. The rainfall has been calculated over all these cities and has been compa
India Meteorological Department real observations. It has been also compared with ECMWF (Europea
for Medium-Range Weather Forecasts) and NCEP results. Ion induced nucleation mechanism has bee
mented into three dimensional interactive chemistry global model, Laboratoire de Météorologie Dy
General Circulation Model (LMD-GCM, version 3.3). RETRO (Reanalysis of the TROpospheric c
composition over the past 40 years) DATA for various species (CO, NOx, Organic Carbon, Black Carb
Carbon, Particulate matter 2.5 μm, Total particulate matter, SO2, NH3, N2O, CH4) has been taken fro
(Global Emission Inventory Activity), France. Dust aerosols datasets has been taken from NASA. Th
has been interpolated over the model grid and simulated over the globe at 96x72x19 resolution with 1
for 30-day runs. Here, the GCM simulated monsoon results without and with the impact of aerosols
studied and compared.