

Using Chemistry Module of RegCM4.3 Over China

Group 19

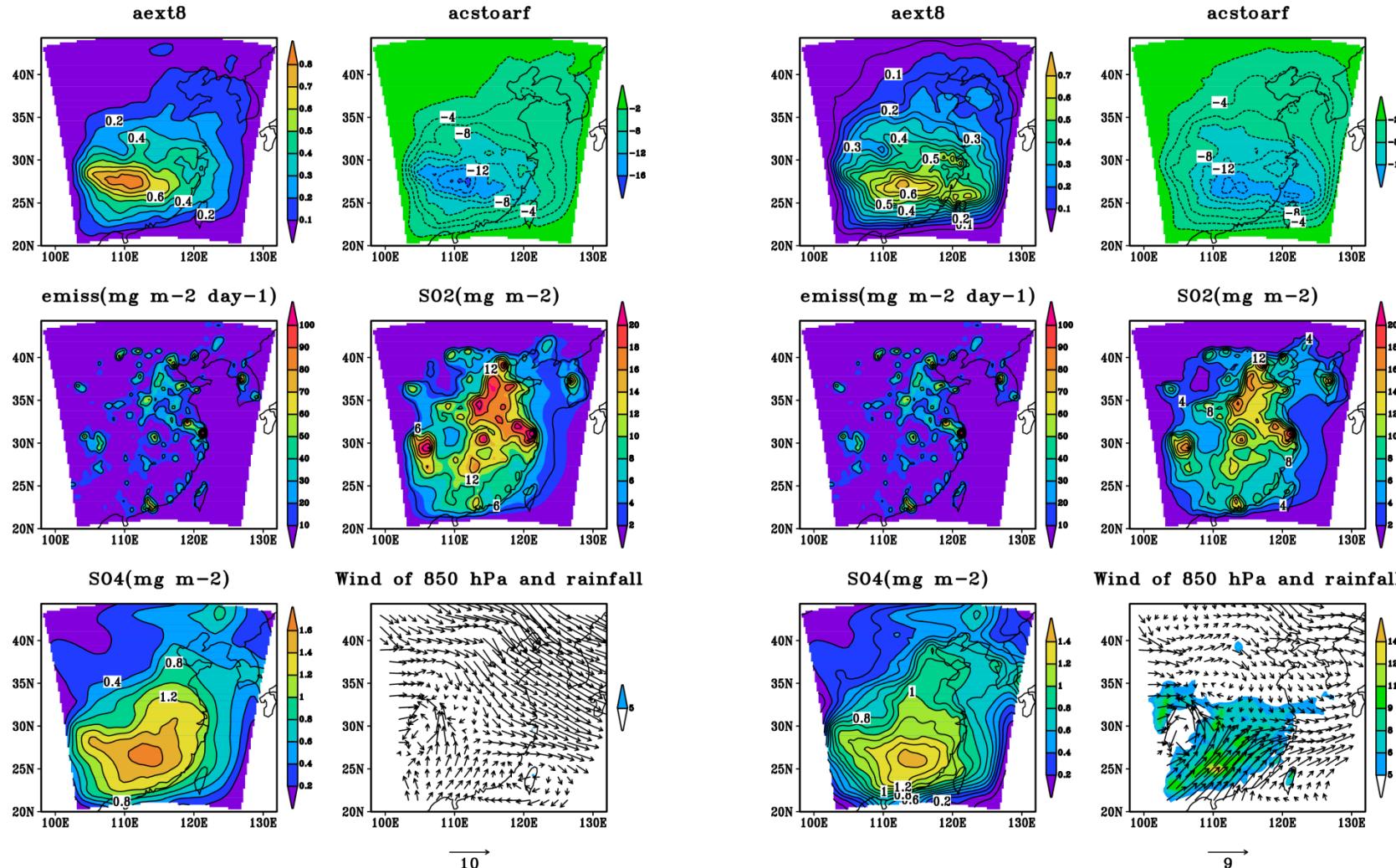
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1. Model Setting

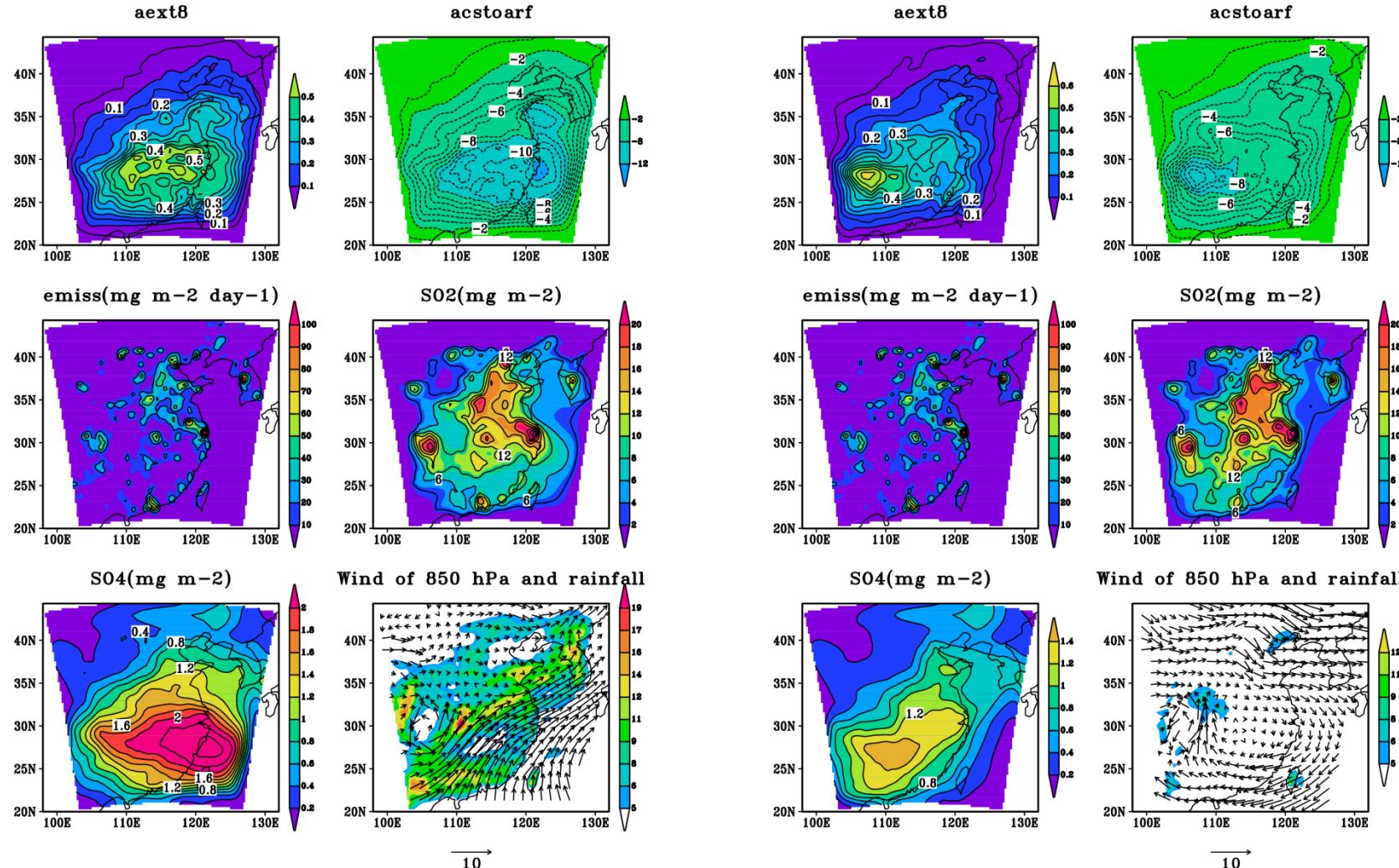
- Models used are from rc4 to rc11.
- Domain resolution is 60 km with Mercator projection.
- Grell convection Scheme, land model of BATS, and Hostlag PBL are used.
- Simulations with the chemistry parameters of “CBMZ”, “SULF”.
- Period of simulations is during Nov 1 2002 to Dec 31 2003.

2. Results of “SULF” run



DJF

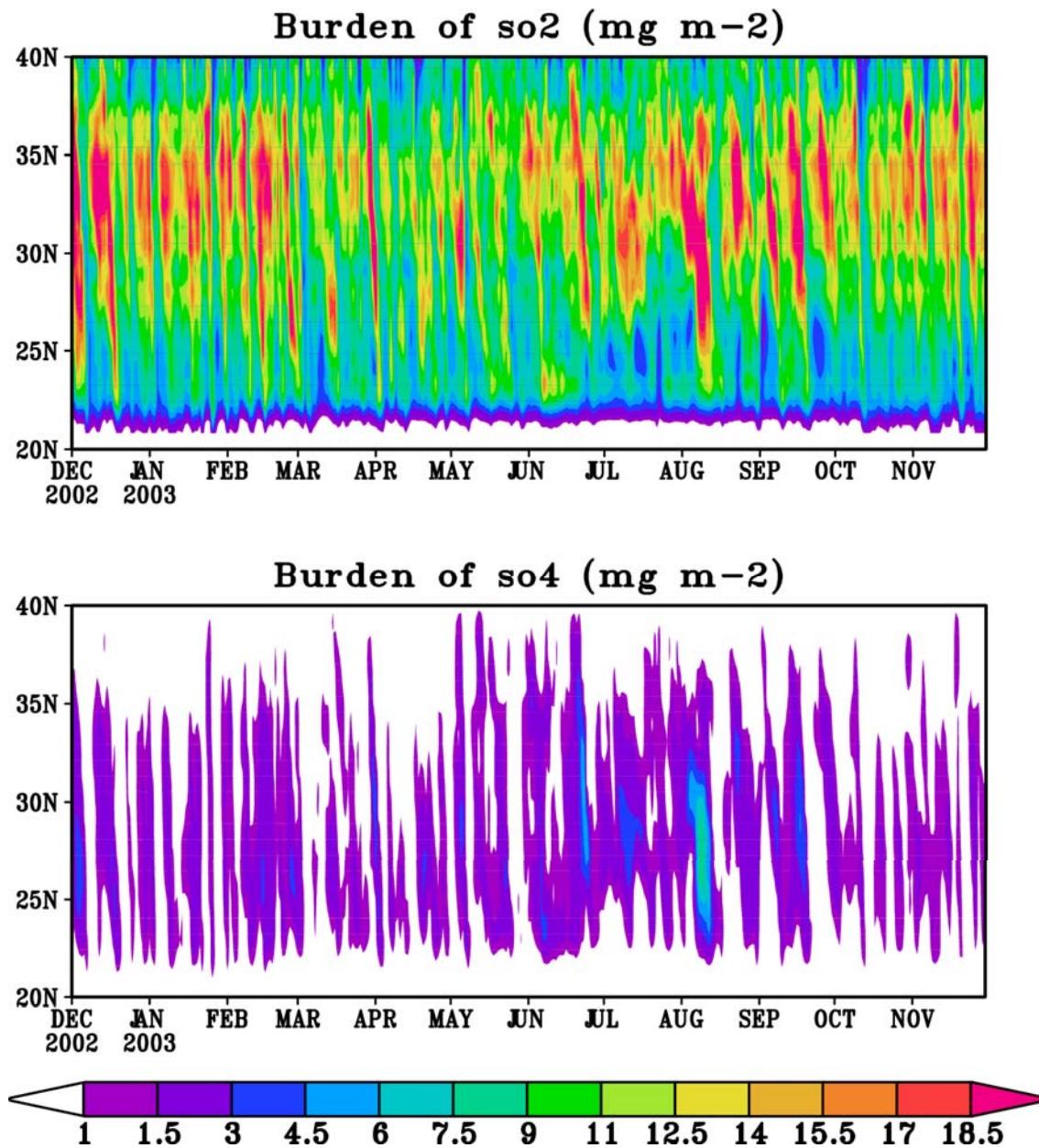
MAM



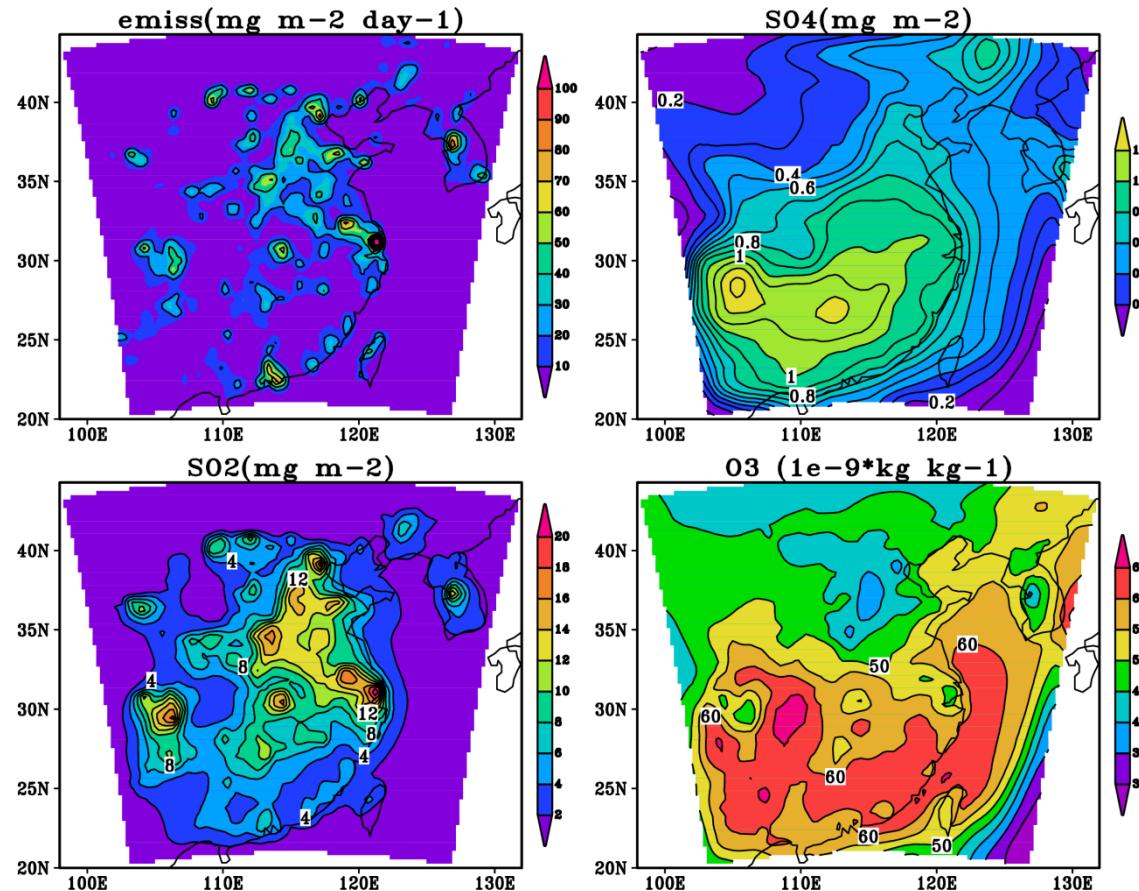
JJA

SON

Time variations
of SO₂ and SO₄
burden (105E-
125E)



3. Results of “CBMZ” run



Dec 1 2002 to Jan 5 2003

4. Problems

1. Model (rc11) is collapsed after integration of about 6 month with “CBMZ”.

```
open_domain: READING HEADER FILE:input/smea_DOMAIN000.nc
initial date of the global simulation: idate = 2002-11-01 00:00:00 UTC
Setting IPCC scenario to A1B
initial date of this simulation: 2002-11-01 00:00:00 UTC
final date of this simulation: 2003-12-31 00:00:00 UTC
total simulation lenght      10200 hours
dtsec (timestep in seconds) 150.0000
input/output statistics
```

```
SEARCH BC data for 2003053112
SEARCH BC data for 2003053112
READY BC from      2003053106 to 2003053112
WHUUUUBBBASAAAGASDDWD!!!!!!!!!!!!!!
No more atmosphere here....
CFL violation detected, so model STOP
#####
#          DECREASE DT !!!!      #
#####
----- FATAL CALLED -----
Fatal in file: mod_tendency.F90 at line:    1487
CFL VIOLATION
-----
mod_tendency.F90 :      1487:           1
application called MPI_Abort(MPI_COMM_WORLD, 1) - process 0
rank 0 in job 1 node077.gr.arctur.local_38518 caused collective abort of all ranks
exit status of rank 0: killed by signal 9
[fsolmon@arctur1 run cbmz]$
```