Model data belonging to paper:

Description and evaluation of the community aerosol dynamics model MAFOR v2.0

by:

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Numerical experiments in the Supplementary Materials of this article

Case 1: Performance of the sectional representation

Copy the mafor executable to the subfolder input of Case1.

The subfolder input contains all input files for the runs with the MAFOR model.

Before starting the run, replace the file inaero.dat by the corresponding inaero.dat with different number of size bins.

16 bins:

cp inaero.dat.016 inaero.dat

execute mafor.exe

move results files (*.res) to subfolder output/016

32 bins:

cp inaero.dat.032 inaero.dat

execute mafor.exe

move results files (*.res) to subfolder output/032

60 bins:

cp inaero.dat.060 inaero.dat

execute mafor.exe

move results files (*.res) to subfolder output/060

80 bins:

cp inaero.dat.080 inaero.dat

execute mafor.exe

move results files (*.res) to subfolder output/080

120 bins:

cp inaero.dat.120 inaero.dat

execute mafor.exe

move results files (*.res) to subfolder output/120

160 bins:

cp inaero.dat.160 inaero.dat

execute mafor.exe

move results files (*.res) to subfolder output/160

Plot the number size distribution data:

Change to subfolder postproc

Open GNU Octave

Execute the script case1_sizediswet_allbins.m

The created plot is then in subfolder plots

Case 2: Performance of the numerical solution for coagulation

Copy the mafor executable to the subfolder input of Case2.

The subfolder input contains all input files for the runs with the MAFOR model.

Before starting the run, replace the file organic.dat by the corresponding organic.dat with compact particles or fractal particles.

Compact particles:

cp organic.dat.CO1 organic.dat

execute mafor.exe

move results files (*.res) to subfolder output/CO1

Fractal particles:

cp organic.dat.CO2 organic.dat

execute mafor.exe

move results files (*.res) to subfolder output/CO2

Plot the number size distribution data:

Change to subfolder postproc

Open GNU Octave

Execute the script case2_sizedis.m

The created plot is then in subfolder plots

Case 3: Performance of the coupled PNG-MOSAIC scheme

Copy the mafor executable to the subfolder input of Case3.

The subfolder input contains all input files for the runs with the MAFOR model.

Before starting the run, replace the file inchem.dat by the corresponding inchem.dat with different NH3 and/or HNO3 concentrations.

High-N:

cp inchem.dat.highnh4 inchem.dat

execute mafor.exe

move results files (*.res) to subfolder output/highnh4

Low-NH4:

cp inchem.dat.lownh4 inchem.dat

execute mafor.exe

move results files (*.res) to subfolder output/lownh4

Low-NO3:

cp inchem.dat.lowno3 inchem.dat

execute mafor.exe

move results files (*.res) to subfolder output/lowno3

Plot the summed particle mass concentration of chemical species for High-N, Low-NH4 and Low-NO3:

Change to subfolder postproc

Open GNU Octave

Execute the script case3_aermass_highn.m

The created plot is in subfolder plots

Execute the script case3_aermass_lownh4.m

The created plot is in subfolder plots

Execute the script case3_aermass_lowno3.m

The created plot is in subfolder plots