

CHAP

Input:

SO₂ sources, atmospheric state

calculate SO₂ loss coefficients

call CHAPTRAN to obtain B_{SO_2}

calculate SO₄ sources
and loss coefficients

call CHAPTRAN to obtain B_{SO_4}

calculate $q_{SO_2,s}$ and $q_{SO_4,s}$

CHAPTRAN

Input: sources, loss coefficients,
transport velocity

For each GC source (j):

1) calculate $B_x^{(j)}$ for the source GC and fluxes
out of this cell

2) repeat step 1 for other source-influenced
cells until

- either zonal wind changes sign

- or the whole latitudinal circle is looped over

3) calculate $B_x^{(j)}$ for meridional neighbour cells

⇒ $B_x^{(j)}$ at the model grid

$$B_{x,a} = \sum B_x^{(j)}$$

$$B_{x,smo} = (\text{smoothed } B_{x,a})$$

Output:

$B_x = (\text{mass-conservation adjusted } B_{x,smo})$