This low resolution run was made to facilitate a quick look at magnetospheric topology and magnetic reconnection. The run was made through the CCMC Run on Request system and has run name:

Darren\_DeZeeuw\_021022\_1

It has a constant 5 Bz Southward IMF and constant other solar wind conditions. The total number of cells is less than 900k and there is a constant grid size inside x +/- 20 Re, y,z +/- 16 Re. In addition, the run wrote out just this constant grid area to a special output which includes only around 341k cells. This includes:

cut\_var\_1\_e20000101-020000-000.out

Binary cell center data dump, typically read by IDL.

cut\_var\_1\_e20000101-020000-000.out.cdf

Kameleon conversion of this data into CDF format,

readable by OpenSpace.

cut\_var\_1\_e20000101-020000-000\_reggrid.tec\_Visualizer.html

RECONX post processing analysis of this output’s magnetic structure.

View in browser as a self-contained plotly visualization.

NOTE: Doesn’t open in google docs. Can also be viewed here:

<https://ccmc.gsfc.nasa.gov/RoR_WWW/GM/SWMF/2022/Darren_DeZeeuw_021022_1/RECONX_Glocer_VIS/cut_var_1_e20000101-020000-000_reggrid.tec_Visualizer.html>

cut\_mhd\_2\_e20000101-020000-000.dat

ASCII TecPlot format output of this region with points and cube

connectivity.

The cut\_mhd\*.dat file looks like this below. The TITLE line is obvious. The VARIABLES line lists the variables and units at each point. The ZONE line describes this block of data, 341416 nodes or data points and 342225 elements or 3D cubes (bricks) with 8 nodes defining the connectivity. Below that are lines for the nodes, each line containing all the variables for that position. Only one line is shown below. Then after a big cutout, the last line is shown, which is connectivity for the last cube. This is represented at the node number from the list of nodes. Numbering starts at 1.

TITLE="BATSRUS: cut Data, 2000/01/01 02:00:00.000"

VARIABLES ="X [R]", "Y [R]", "Z [R]", "Rho [amu/cm^3]", "U\_x [km/s]", "U\_y [km/s]", "U\_z [km/s]", "B\_x [nT]", "B\_y [nT]", "B\_z [nT]", "P [nPa]", "J\_x [`mA/m^2]", "J\_y [`mA/m^2]", "J\_z [`mA/m^2]"

ZONE T="3D N=0027701 T=0002:00:00", N= 341416, E= 342225, F=FEPOINT, ET=BRICK

AUXDATA BLOCKS="1744 8 x 8 x 8"

AUXDATA BODYNUMDENSITY="28.00"

AUXDATA BORIS="T 0.0100"

AUXDATA BTHETATILT="0.0000"

AUXDATA CELLS="892928"

AUXDATA CELLSUSED="892376"

AUXDATA CODEVERSION="BATSRUS 9.20"

AUXDATA COORDSYSTEM="GSM"

AUXDATA COROTATION="F"

AUXDATA FLUXTYPE="Sokolov"

AUXDATA GAMMA="1.666667"

AUXDATA ITER="27701"

AUXDATA NPROC="79"

AUXDATA ORDER="2 mc3, beta= 1.20000"

AUXDATA RBODY="2.50"

AUXDATA SAVEDATE="Save Date: 2022/02/10 at 19:27:30"

AUXDATA TIMEEVENT="2000/01/01 02:00:00.000"

AUXDATA TIMEEVENTSTART="2000/01/01 00:00:00.000"

AUXDATA TIMESIM="T=0002:00:00"

AUXDATA TIMESIMSHORT="T=0002:00"

-2.050000E+01 -1.650000E+01 -1.650000E+01 3.774926E+00 -3.115540E+02 -2.537409E+01 -5.589348E+01 -5.507961E+00 -1.101645E+00 -3.206740E+00 8.039593E-02 1.428337E-04 -1.207091E-04 3.144559E-04

… cut out most of file until last line …

341416 295639 296607 296102 300851 301356 302324 301819