Assimilating airborne gas and aerosol measurements into HYSPLIT: A visualization tool for simultaneous assessment of air mass history and back trajectory reliability

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Supplement

Adjust folder locations in all files as needed.

1) Run *mat2Hysplit.m*

- Use example data provided in *flight_data.mat*
- *mat2Hysplit.m* calls *Hysplit_text_input.m* for additional information
- Creates text files for HYSPLIT input and a file called *trajinumbers.txt* needed in step 5

2) Download *gdas1.aug07.w1* and *gdas1.aug07.w2* meteorological data at ftp://arlftp.arlhq.noaa.gov/pub/archives/gdas1/ to process text files with HYSPLIT created with *mat2Hysplit.m* using *flight_data.mat* - http://ready.arl.noaa.gov/gdas1.php provides temporal range of w1, w2, .. files

3) Open HYSPLIT and select all additional meteorological variables along the trajectory (Figs. 1 and 2) for **Hysplit2mat.m** (see step 5) to work properly

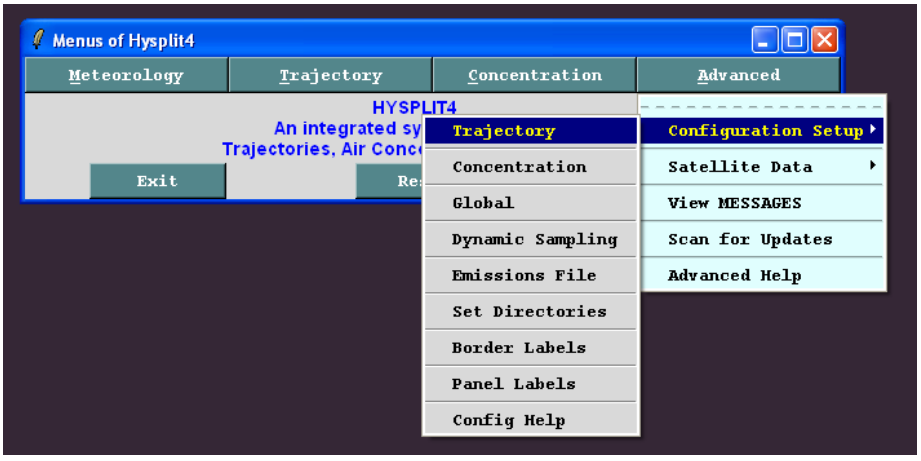

Figure 1 – Select additional trajectory information

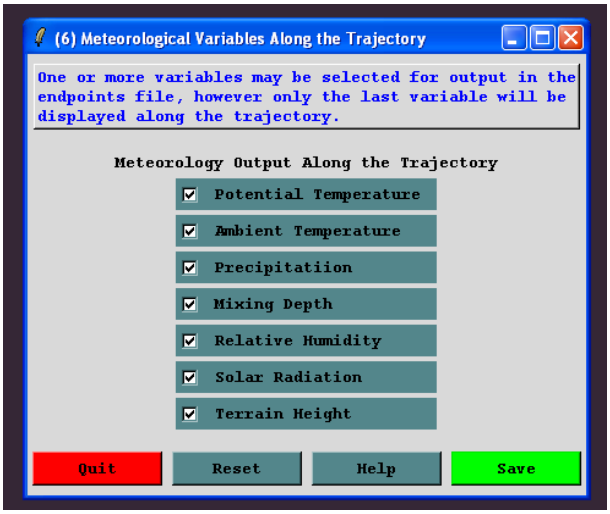

Figure 2 – Select all data sets

4) Run *Hysplit.bat* to process text files with HYSPLIT automatically

- Open *Hysplit.bat* with any text editor and change file locations of input text files, *CONTROL* (comes with HYSPLIT installation), and *hyts_std.exe* (comes with HYSPLIT installation)
- *Hysplit.bat* needs to be copied into the *\hysplit4\working* directory in order for it to work properly
- Creates output text files including the complete trajectory information for use in step 5

5) Run *Hysplit2mat.m* for conversion to Matlab format – it creates the file *ExampleFlight.mat* attached here

6) Run *Example_Trajectories.m* to create Figure 3

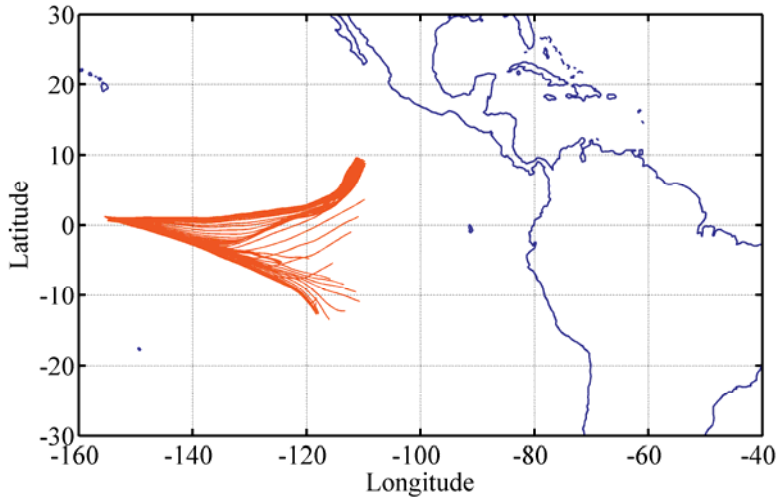

Figure 3 – Example Trajectories