HYSPLIT

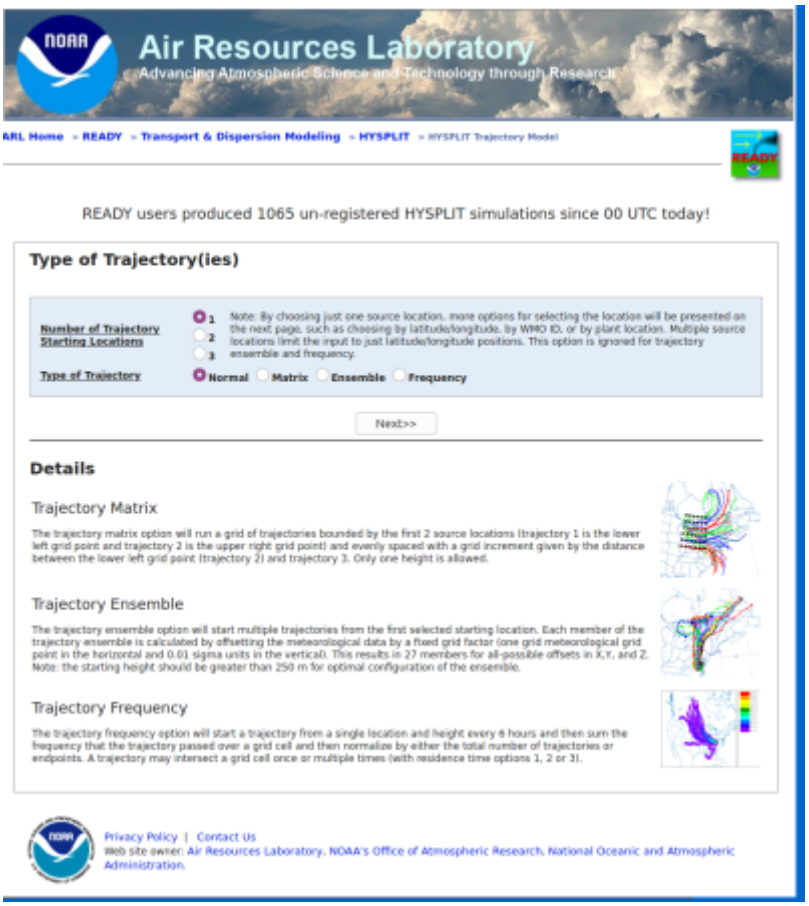
With NOAA's HYSPLIT service, trajectories can be calculated online. You can find instructions on how to do this below:

Instructions

Click on the pictures to enlarge them.

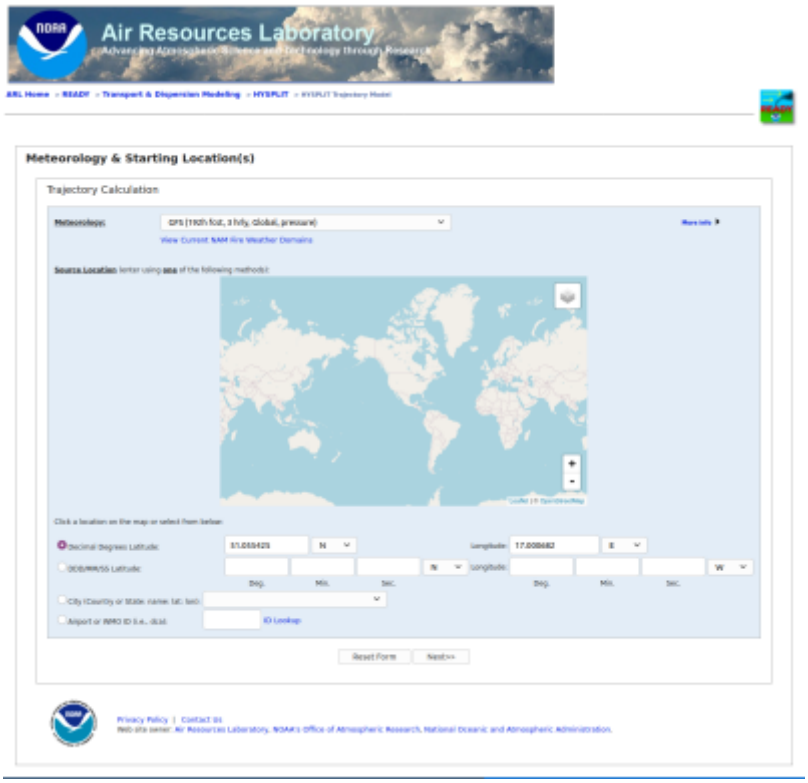
1. Step

The following link will take you to the entry form: https://www.ready.noaa.gov/hypub-bin/trajtype.pl



Choose **1** Trajectory Starting Location and **NORMAL** for the Type of Trajectory.

2. Step



Here you have to select the weather model and the location where the trajectories start. In the example, we have selected the starting location of the Gordon Bennett Race 2021, Wrocław, Racecourse – Partynice, Poland. (Koordinates: 51.055425 N and 17.000682 E)

Attention: Not all weather models cover the whole world, therefore we choose the GFS model.

3. Step

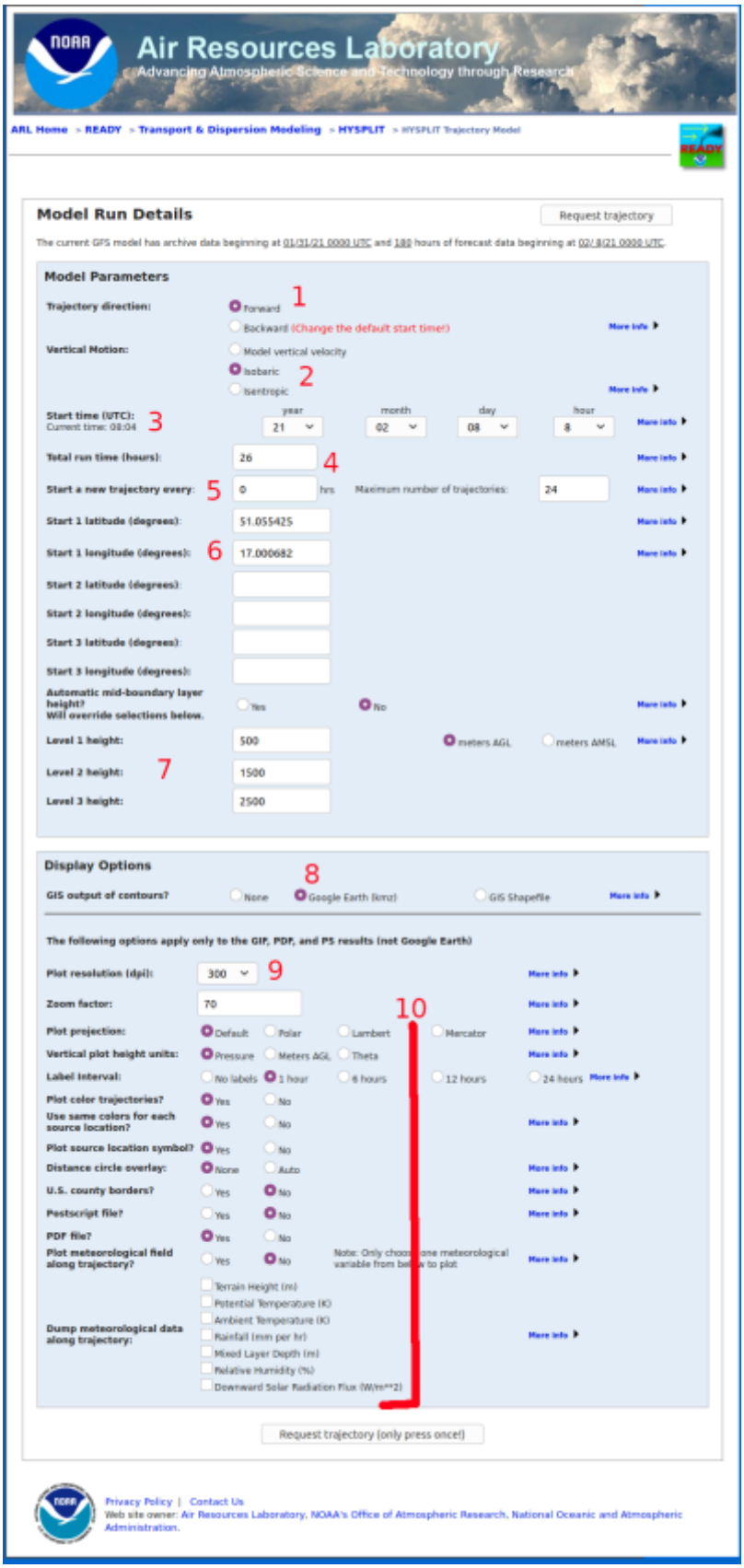
Select Meteorological Forecast Circle.



Normally, the last calculation run is suggested, and it is a good idea to select this. If you perform several calculations with different runs, you can see whether the forecast is stable or not.

4. Step

Model Run Details



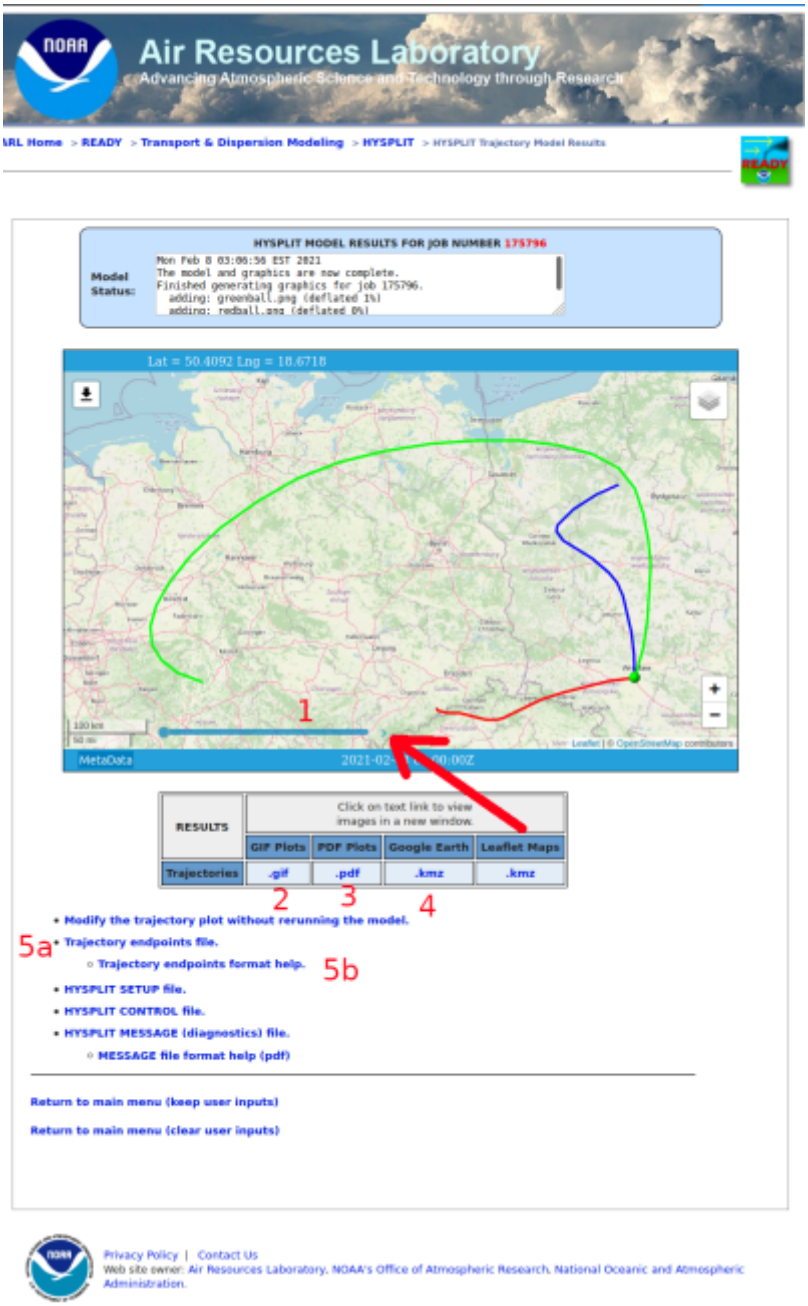
1. Trajectory direction: **Forward**

2. Vertical Motion: **Isobaric**
3. Start time (UTC): Your choice
4. Your time for this flight altitude
5. Here you can specify how often a new trajectory should be started at intervals. First select 0 so that only one is calculated. Later you can experiment with these options.
6. Coordinates of the starting point.
7. Here you can select up to three heights for which trajectories are calculated.
8. Select **Google Earth (kmz)**
9. Here you can choose the resolution of the graphics.
10. You can first select the other fields as in the example.

If you click on **Request trajectory**, you can start the calculation.

5. Results

Now you have to be patient until the calculation and the creation of the graphics are finished.

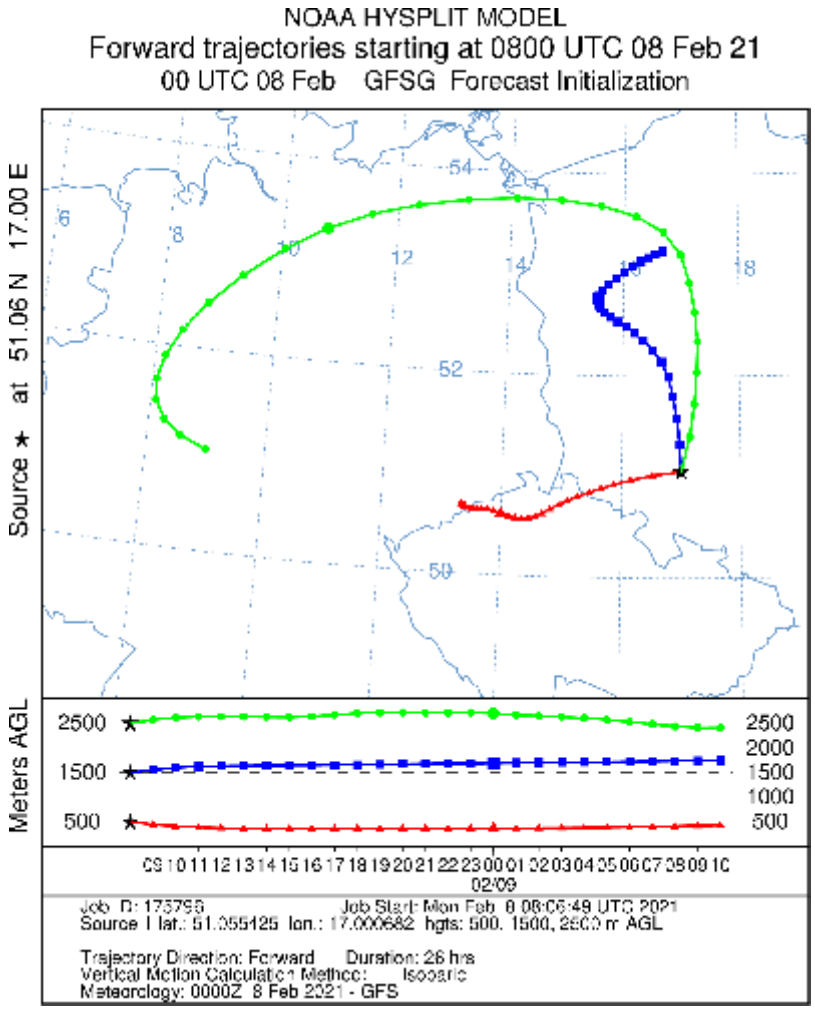


1 Interactive map

Here you can see when the balloon will be where on the trajectory.

2 GIF

Here you can display the trajectory as a gif.



3 PDF

hysplit5step2.pdf

4 KMZ Google Earth

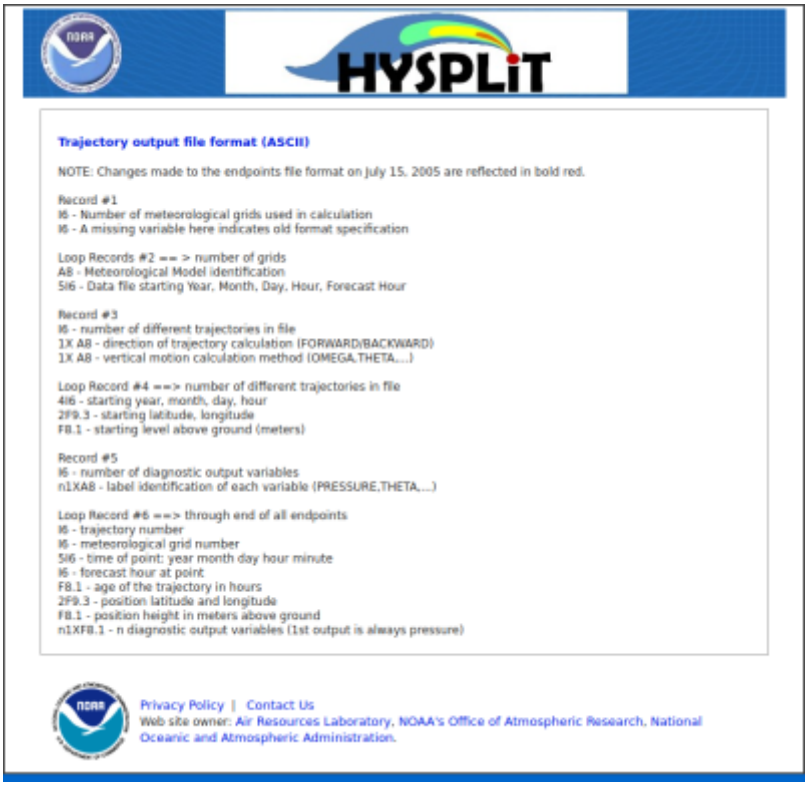
hysplit5step3.kmz

5

a. Trajectory endpoints file.

hysplit5step4.txt

b. Trajectory endpoints format help.



HYSPLIT

Trajectory output file format (ASCII)

NOTE: Changes made to the endpoints file format on July 15, 2005 are reflected in bold red.

Record #1
I6 - Number of meteorological grids used in calculation
I6 - A missing variable here indicates old format specification

Loop Records #2 == > number of grids
A8 - Meteorological Model identification
5I6 - Data file starting Year, Month, Day, Hour, Forecast Hour

Record #3
I6 - number of different trajectories in file
1X A8 - direction of trajectory calculation (FORWARD/BACKWARD)
1X A8 - vertical motion calculation method (OMEGA,THETA,...)

Loop Record #4 ==> number of different trajectories in file
4I6 - starting year, month, day, hour
2F9.3 - starting latitude, longitude
F8.1 - starting level above ground (meters)

Record #5
I6 - number of diagnostic output variables
n1XA8 - label identification of each variable (PRESSURE,THETA,...)

Loop Record #6 ==> through end of all endpoints
I6 - trajectory number
I6 - meteorological grid number
5I6 - time of point: year month day hour minute
I6 - forecast hour at point
F8.1 - age of the trajectory in hours
2F9.3 - position latitude and longitude
F8.1 - position height in meters above ground
n1XF8.1 - n diagnostic output variables (1st output is always pressure)

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Web site owner: Air Resources Laboratory, NOAA's Office of Atmospheric Research, National Oceanic and Atmospheric Administration.

This is just one example. Of course, you could experiment with different inputs.

Your comments? Contact Volker Löschhorn.

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