

## Guide for using HYSPLIT for back trajectory calculations

For further information, see:

- HYSPLIT Tutorial and User's Guide on HYSPLIT website
- Gebhart, Schichtel, and Barna: Directional Biases in Back Trajectories Caused by Model and Input Data, *J. Air & Waste Manage. Assoc.*, 55:1649-1662, 2005.

Go to <https://ready.arl.noaa.gov/HYSPLIT.php>

Run HYSPLIT Trajectory Model → Compute *archive* trajectories

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Select Ensemble as “Type of Trajectory”

### Type of Trajectory(ies)

**Number of Trajectory Starting Locations**

☒ 1  
☐ 2  
☐ 3

Note: By choosing just one source location, more options for selecting the location will be presented on the next page, such as choosing by latitude/longitude, by WMO ID, or by plant location. Multiple source locations limit the input to just latitude/longitude positions. This option is ignored for trajectory ensemble and frequency.

**Type of Trajectory**

☐ Normal ☐ Matrix ☒ Ensemble ☐ Frequency

Next>>

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For meteorological data, choose ~~GDAS 0.5~~ GDAS 0.5 degree, global. Enter Lat/Lon.

### Meteorology & Starting Location(s)

Ensemble Calculation

**Meteorology:**

GDAS (0.5 degree, global, 09/2007-present)

More info ▶

**Source Location** (enter using one of the following methods):

☐ Open Map Display

☒ Decimal Degrees Latitude: 46.548300 N Longitude: 7.980600 E

☐ DDD/MM/SS Latitude: Deg. Min. Sec. Longitude: Deg. Min. Sec.

☐ City (Country or State: name: lat: lon):

☐ Airport or WMO ID (i.e., dca): ID Lookup

Reset Form

Next>>

Choose meteorology file corresponding to the ending date of the desired backtrajectory.

# Meteorology File

**Meteorology:** Archived GDAS0p5  
**Source Location:** Lat: 46.548300 Lon: 7.980600

## Choose an archived meteorological file

Archive File:

Next>>

## Parameters:

- Trajectory direction: **Backward**
- Vertical Motion: **Model vertical velocity**
- Start time (UTC): Note that time is UTC and not local time
- Total run time (hours): No more than 120 hours (5 days)
- Maximum number of trajectories: default is 24
- Level 1 height: 500 meters AGL. Here you can try values between 100 and 2000 meters AGL (see Gebhart et al. 2005).

## Model Run Details

Request trajectory

The archived data file (GDAS0p5) has data beginning at 03/25/17 0000 UTC.

### Model Parameters

#### Trajectory direction:

- ☐ Forward  
☒ Backward (Change the default start time!)

More info ►

#### Vertical Motion:

- ☒ Model vertical velocity  
☐ Isobaric  
☐ Isentropic

More info ►

#### Start time (UTC):

Current time: 13:26

year month day hour

More info ►

#### Total run time (hours):

More info ►

#### Start a new trajectory every:

hrs

Maximum number of trajectories:

More info ►

#### Start 1 latitude (degrees):

More info ►

#### Start 1 longitude (degrees):

More info ►

#### Start 2 latitude (degrees):

#### Start 2 longitude (degrees):

#### Start 3 latitude (degrees):

#### Start 3 longitude (degrees):

#### Level 1 height:

☒ meters AGL

☐ meters AMSL

More info ►

#### Level 2 height:

#### Level 3 height:

Select desired form of graphical output.

# HYSPLIT Trajectory Model Results

## HYSPLIT MODEL RESULTS FOR JOB NUMBER 176867

**Model  
Status:**

Last Changed Rev: 947  
HYSPLIT4 - Initialization  
Model submitted on Thu May 17 09:12:55 EDT 2018

### RESULTS

Click on text link to view  
images in a new window.

[GIF Plots](#)

[PDF Plots](#)

[Trajectories](#)

[.gif](#)

[.pdf](#)

## NOAA HYSPLIT MODEL Backward trajectories ending at 1500 UTC 25 Mar 17 GFSG Meteorological Data

