

Create virtual balloon flight



Main Page: [Virtual Balloon Distance Race](#)

Create documentation

How to create the data files to participate in the virtual gas balloon long distance competition.

Launch point

Koordinates of the launch point:

48.69311 N 6.183333 E Place Stanislas¹⁾ in Nancy (FRANCE)

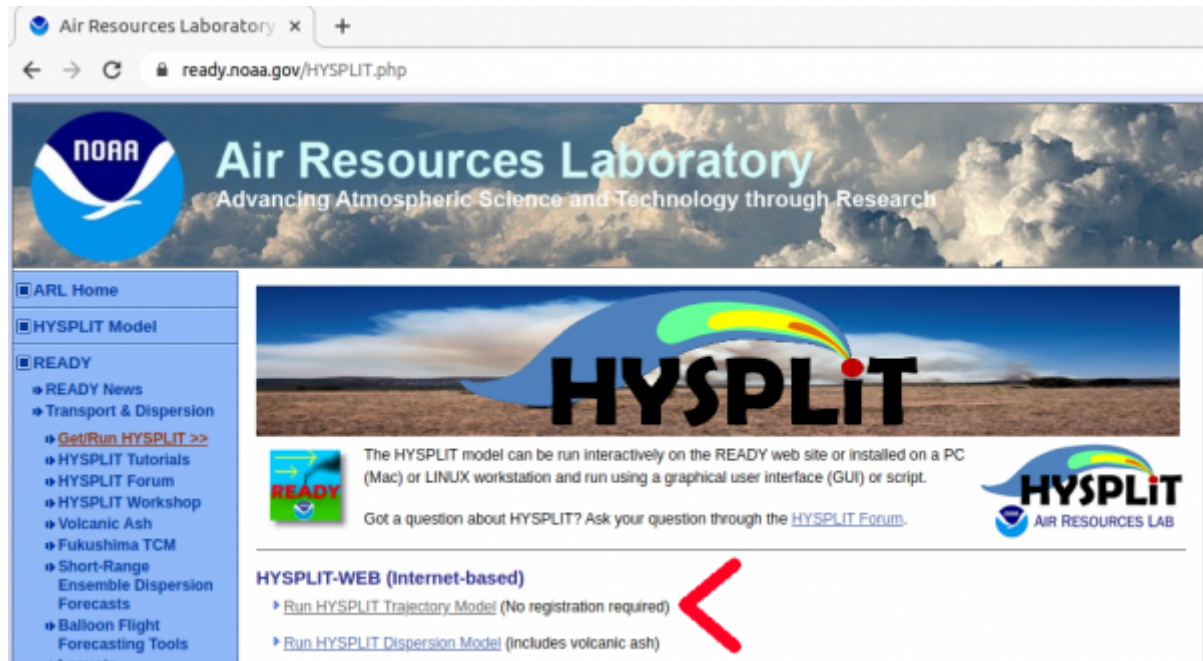
Calculate Trajectory

<https://www.ready.noaa.gov/HYSPLIT.php>

1

!If you have difficulties to reach the server, try another browser.

Select HYSPLIT-WEB (Internet-based) -> Run HYSPLIT TRAJECTORY MODEL



2

https://www.ready.noaa.gov/HYSPLIT_traj.php

Select »Compute forecast trajectories«.

The screenshot shows a web browser window with the URL `ready.noaa.gov/HYSPLIT_traj.php`. The page header features the NOAA logo and the text "Air Resources Laboratory Advancing Atmospheric Science and Technology through". Below the header is a breadcrumb trail: [ARL Home](#) > [READY](#) > [Transport & Dispersion Modeling](#) > [HYSPLIT](#) > [HYSPLIT Trajectory Model](#). The main content area has a yellow box with the HYSPLIT logo and the word "Trajectories". Below this box is a list of links: [Compute forecast trajectories](#), [Compute archive trajectories](#), [Retrieve previous model results](#), [Restart user session \(clear user inputs\)](#), [Current pre-computed U.S. traj](#), [Trajectory optimization for ballo](#), and [Return to main HYSPLIT page](#). A red arrow points to the "Compute forecast trajectories" link. At the bottom, there is a section titled "Daily Limits" with the text: "Users are limited to 500 trajectories per day in order to share the resources available with all HYSPLIT users."

3

- Number of Trajectory Starting Locations: Select »1«
- Type of Trajectory: Select »Normal«



READY users produced 3407 un-registered HYSPLIT simulations

Type of Trajectory(ies)

Number of Trajectory Starting Locations ☒ 1 ☐ 2 ☐ 3

Type of Trajectory ☒ Normal ☐ Matrix ☐ Ensemble ☐ Frequency

Note: By choosing just one source location, more options for selecting the starting location are available, including choosing by latitude/longitude, by WMO ID, or by plant location. Multiple source locations are also available. This option is ignored for trajectory ensemble and frequency.

Next>>

4 Meteorology and Starting Location

1. Meteorology: Select »GFS (240h fcst, 3 hrly, Global, pressure)
2. Fill in the coordinates of the starting location.


Meteorology & Starting Location(s)

Trajectory Calculation

1 **Meteorology:** GFS (240h fcst, 3 hrly, Global, pressure) [More info](#)

[View Current NAM Fire Weather Domains](#)

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



Click a location on the map or select from below:

2 ☒ **Decimal Degrees Latitude:** 48.693611 N Longitude: 6.183333 E

☐ **DDD/MM/SS Latitude:** 48 41 37 N Longitude: 006 11 00 E

Deg. Min. Sec. Deg. Min. Sec.

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

☐ **Airport or WMO ID (i.e., dca):** [ID Lookup](#)

[Reset Form](#) [Next>>](#)

5 Meteorology File

You can overtake the proposal.

Meteorology File

Meteorology: GFS

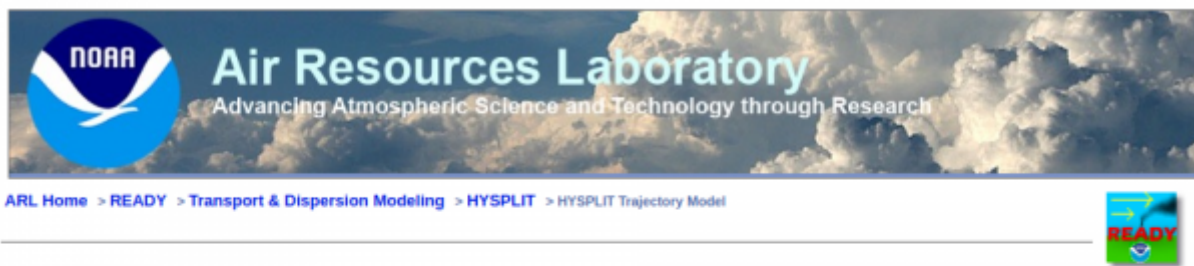
Source Location: Lat: 48.693611 Lon: 6.183333

Select Meteorological Forecast Cycle: 06 UTC / 20210322 [More info](#)

[Next>>](#)

6 Model run details

1. Trajectory direction: Select »Forward«
2. Vertical Motion: Select »Isobaric«
3. Start time (UTC): Choose your time of the planned launch.
4. Choose your flight level. Normally you can choose up to three, but for the competition file choose only one please.
5. Display Options: Select Google Earth (kmz) and PDF file? Yes



[ARL Home](#) > [READY](#) > [Transport & Dispersion Modeling](#) > [HYSPLIT](#) > [HYSPLIT Trajectory Model](#)

Model Run Details

Request trajectory

The current GFS model has archive data beginning at 03/14/21 0600 UTC and 240 hours of forecast data beginning at 03/22/21 0600 UTC.

Model Parameters

1

2

3

4

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: 12:14
year: 21 month: 03 day: 22 hour: 10
[More info](#)

Total run time (hours): 240
[More info](#)

Start a new trajectory every: 0 hrs
Maximum number of trajectories: 24
[More info](#)

Start 1 latitude (degrees): 48.693611
[More info](#)

Start 1 longitude (degrees): 6.183333
[More info](#)

Start 2 latitude (degrees):
[More info](#)

Start 2 longitude (degrees):
[More info](#)

Start 3 latitude (degrees):
[More info](#)

Start 3 longitude (degrees):
[More info](#)

Automatic mid-boundary layer height?
Will override selections below.
☐ Yes
☒ No
[More info](#)

Level 1 height: 500
☒ meters AGL
☐ meters AMSL
[More info](#)

Level 2 height: 0

Level 3 height: 0

5

Display Options

GIS output of contours?

☐ None

☒ Google Earth (kmz)

☐ GIS Shapefile

[More info](#)

The following options apply only to the GIF, PDF, and PS results (not Google Earth)

Plot resolution (dpi):

96

[More info](#)

Zoom factor:

70

[More info](#)

Plot projection:

☒ Default

☐ Polar

☐ Lambert

☐ Mercator

[More info](#)

Vertical plot height units:

☐ Pressure

☒ Meters AGL

☐ Theta

[More info](#)

Label interval:

☐ No labels

☐ 1 hour

☒ 6 hours

☐ 12 hours

☐ 24 hours

[More info](#)

Plot color trajectories?

☒ Yes

☐ No

[More info](#)

Use same colors for each source location?

☒ Yes

☐ No

[More info](#)

Plot source location symbol?

☒ Yes

☐ No

[More info](#)

Distance circle overlay:

☒ None

☐ Auto

[More info](#)

U.S. county borders?

☐ Yes

☒ No

[More info](#)

Postscript file?

☐ Yes

☒ No

[More info](#)

PDF file?

☒ Yes

☐ No

[More info](#)

Plot meteorological field along trajectory?

☐ Yes

☒ No

Note: Only choose one meteorological variable from below to plot

☐ Terrain Height (m)

☐ Potential Temperature (K)

☐ Ambient Temperature (K)

☐ Rainfall (mm per hr)

☐ Mixed Layer Depth (m)

☐ Relative Humidity (%)

☐ Downward Solar Radiation Flux (W/m**2)

[More info](#)

Dump meteorological data along trajectory:

[More info](#)

Request trajectory (only press once!)

7

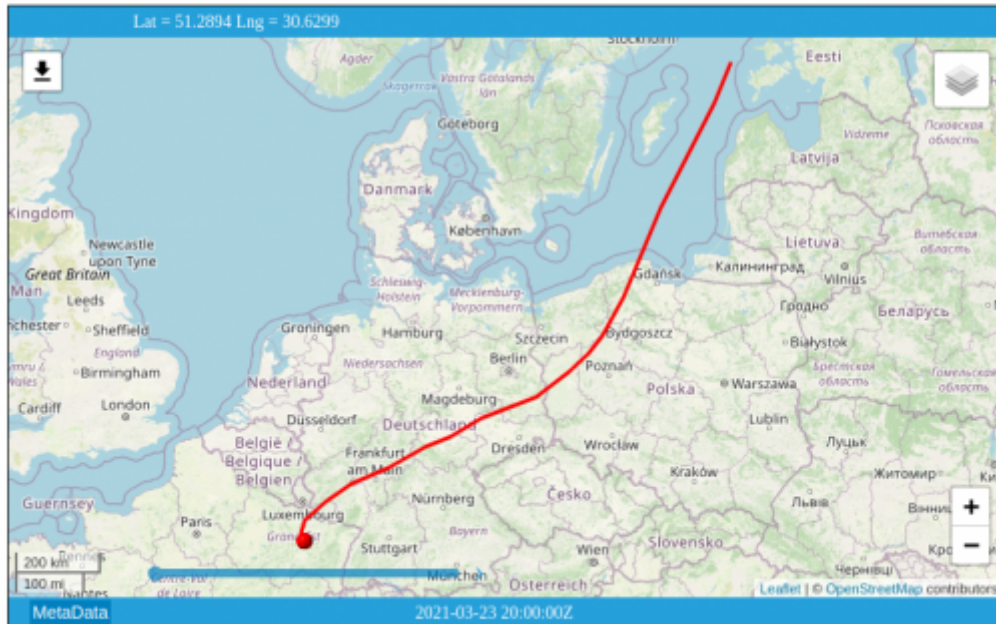
Download PDF and KMZ

- 1. Download PDF PLots ».pdf«
- 2. Download Google Earth ».kmz«



HYSPLIT MODEL RESULTS FOR JOB NUMBER 131640

Model Status: Mon Mar 22 08:30:17 EDT 2021
The model and graphics are now complete.
Finished generating graphics for job 131640.



| RESULTS | Click on text link to view images in a new window. | | | |
|--------------|--|----------------------|----------------------|----------------------|
| | GIF Plots | PDF Plots | Google Earth | Leaflet Maps |
| Trajectories | .gif | .pdf | .kmz | .kmz |

1 2

- [Modify the trajectory plot without rerunning the model.](#)
- [Trajectory endpoints file.](#)
 - [Trajectory endpoints format help.](#)
- [HYSPLIT SETUP file.](#)
- [HYSPLIT CONTROL file.](#)
- [HYSPLIT MESSAGE \(diagnostics\) file.](#)
 - [MESSAGE file format help \(pdf\)](#)

[Return to main menu \(keep user inputs\)](#)

[Return to main menu \(clear user inputs\)](#)

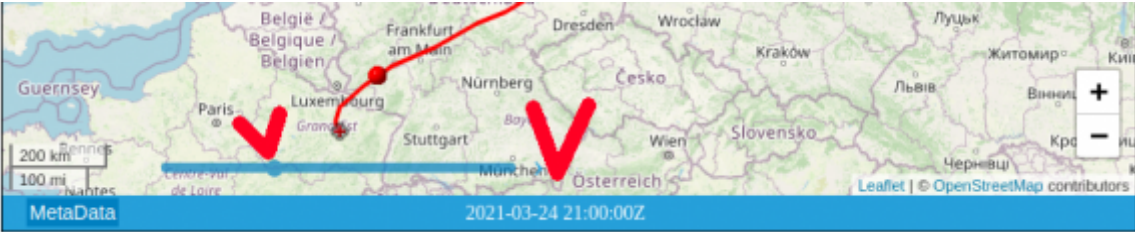


[Privacy Policy](#) | [Contact Us](#)

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

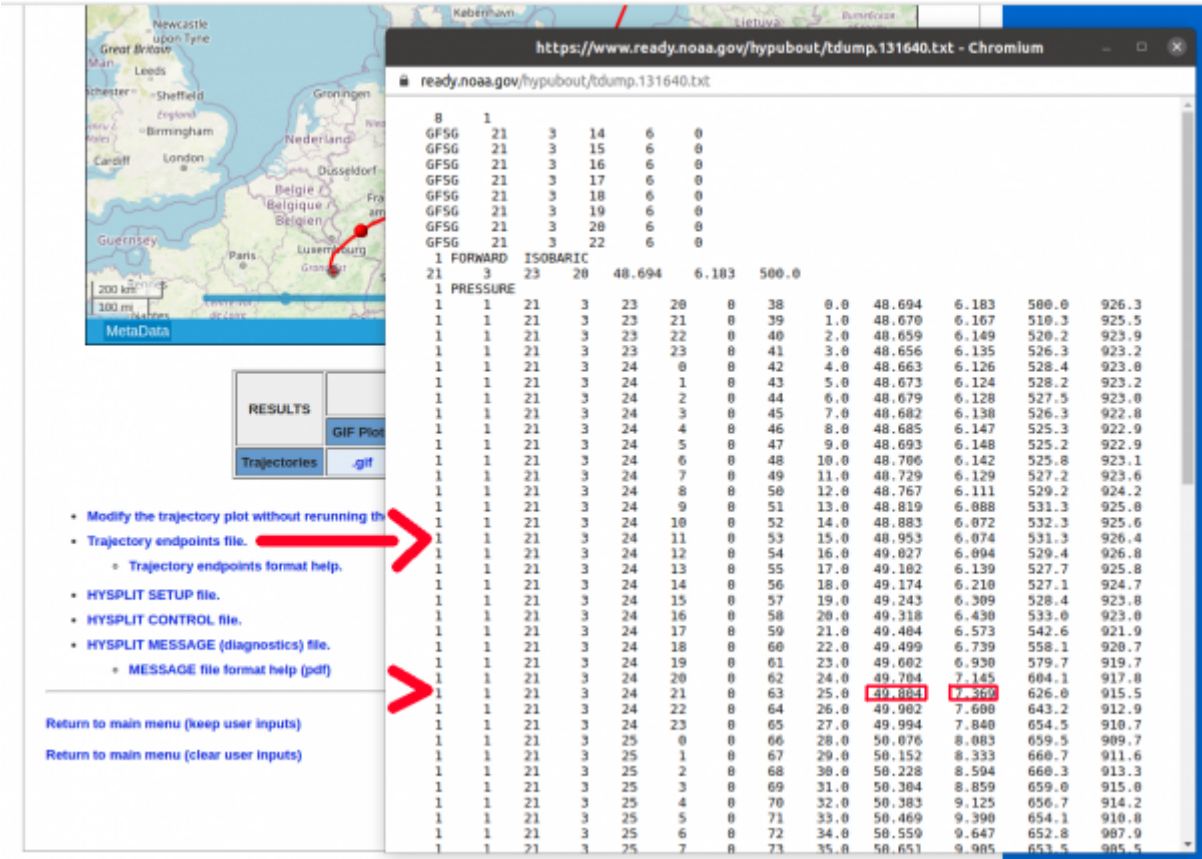
Endurance

Select until when the altitude is to be maintained.

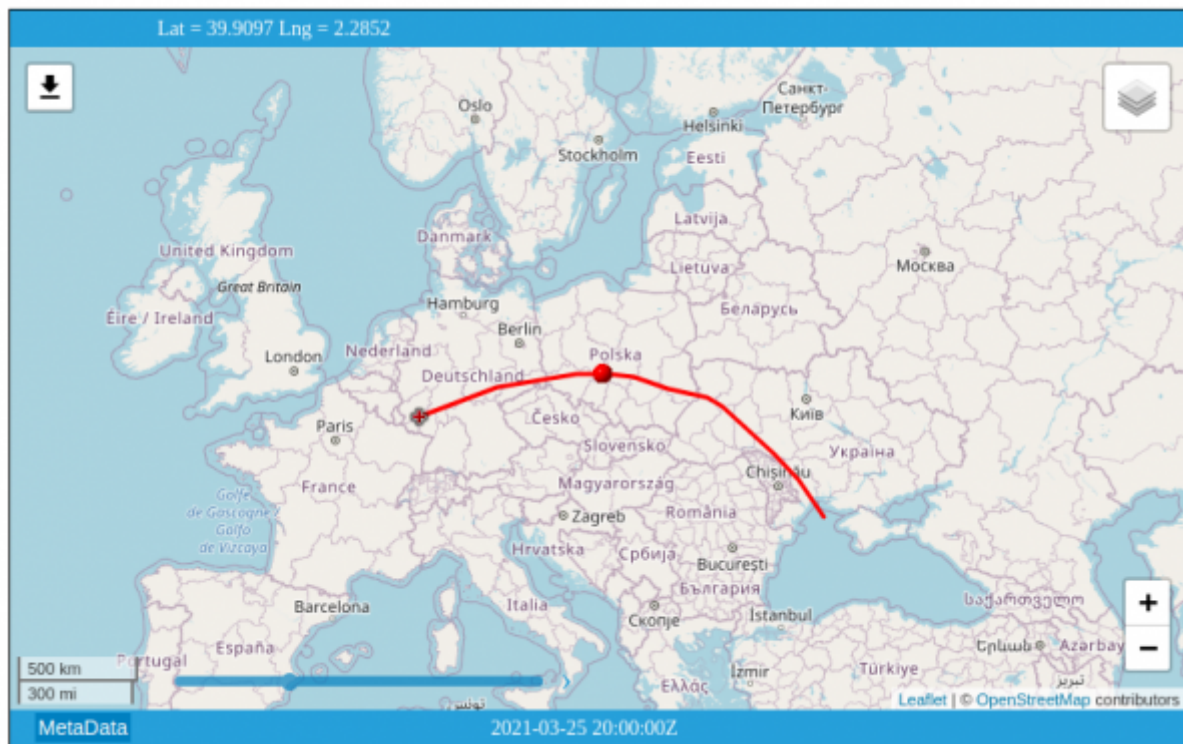


Coordinates for new calculation

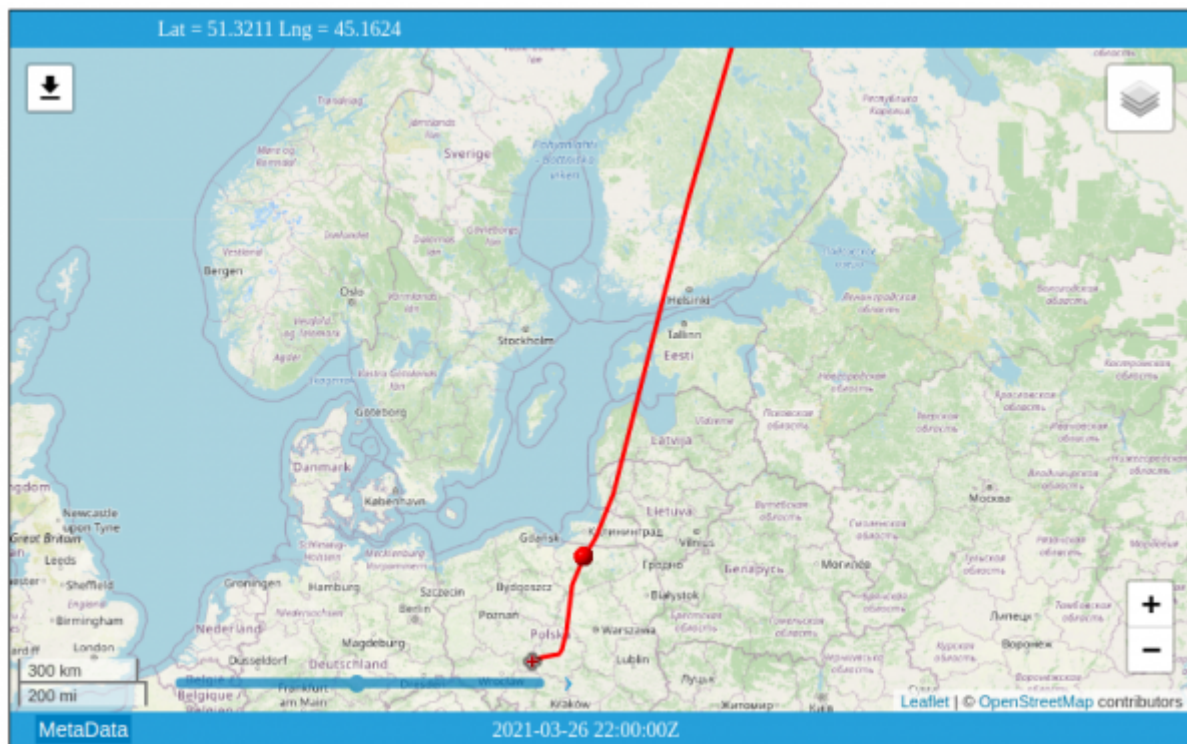
1. Open »Trajectory endpoints file«.
2. Select the data and time you want to change altitude.
3. Copy the coordinates of the point
4. Submit the coordinates and the start time to a new calculation.
5. If you use »Return to main menu (keep user inputs)«, you have only to change coordinates, time and altitude.



2nd altitude



3rd altitude



You can merge up to 8 sections of the flight with gpsvisualizer. But we propose to start with maximum 3 sections.

Compose file for competition flight

To merge the files use <https://www.gpsvisualizer.com>

Select »Google Earth« : https://www.gpsvisualizer.com/map_input?form=googleearth

1. Upload your files. Used in this example:

HYSPLITtraj_131640.kmz

HYSPLITtraj_132070.kmz

HYSPLITtraj_132245.kmz

2. Select .kmz for Google Earth.
3. Set the other values as shown in the example.

General map parameters show advanced map options [+]

2 Output file type: Units:

Google Earth doc name:

Time offset: hrs Add time stamps, if possible:

Add DEM elevation data:

Track options show advanced track options [+]

Track opacity: Line width:

Colorize by: Default color:

Altitude mode:

Draw a shadow: Tickmark interval:

Trackpoint distance threshold: Max. points per track:

Draw as waypoints:

Waypoint options show advanced waypoint options [+]

Waypoint labels:

Default icon: Color:

Show waypoints:

Altitude mode:

Upload your GPS data files here: ?

(Total size cannot exceed 10 MB; .zip/.gz is supported)

File #1 HYSPLIT...1640.kmz

File #2 HYSPLIT...2070.kmz

File #3 HYSPLIT...2245.kmz

[Show additional file input boxes](#)

1

☒ Open in new window

[Save these settings](#) • [Load from saved](#)

Or paste your data here: ?

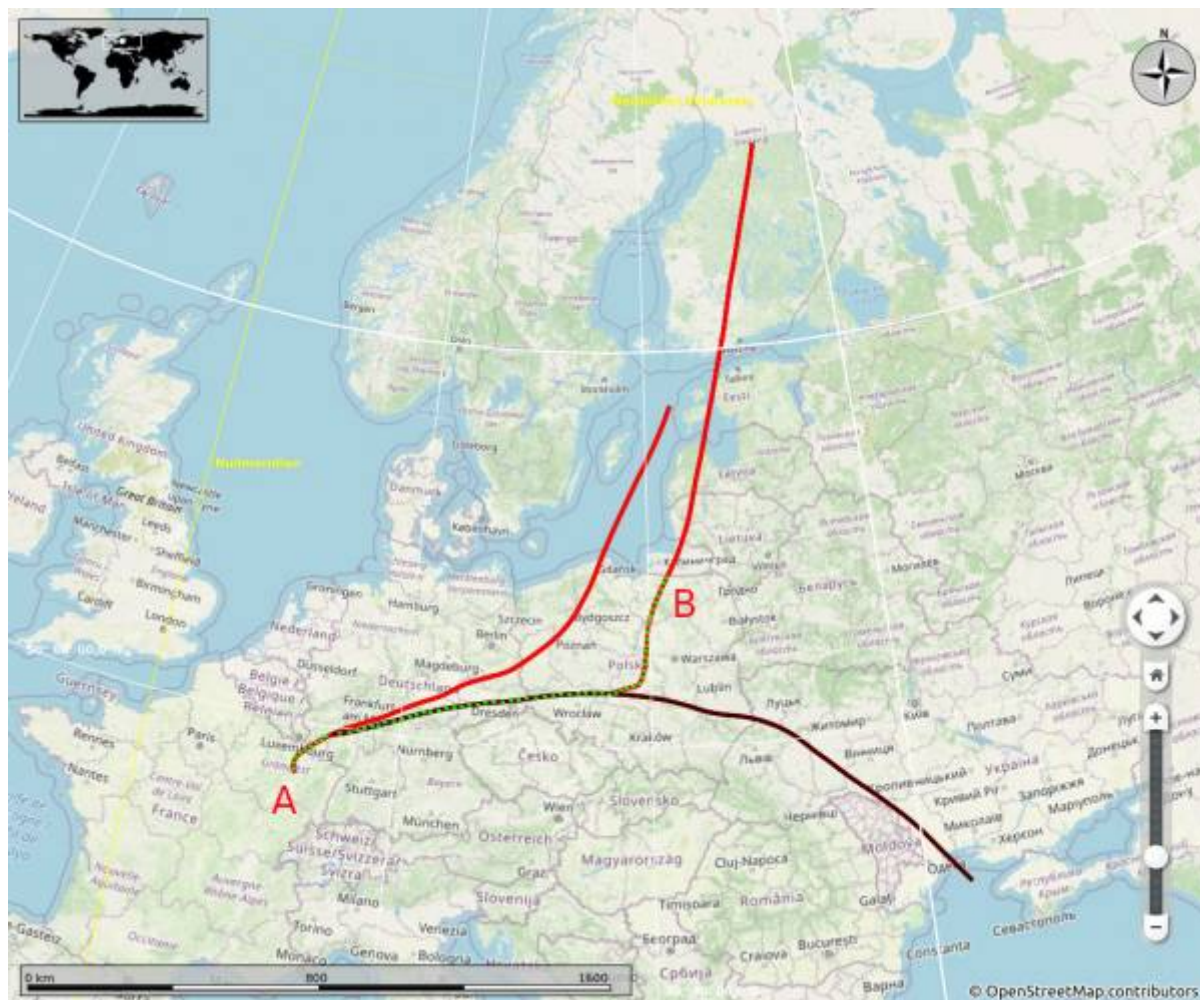
Force plain text to be this type:

Or provide the URL of data on the Web:

Result:

.kmz

.kml



The chart has been created with the KML-file. Due to copyright questions we have not published a screenshot of the Google Earth. To calculate the distance we will measure between the launch point A and the final point B conform to the rules. In this case, between SR and SS, not over water, and within the competition area. Kaliningrad is outside the competition area, so the final point will be south of the border of Kaliningrad and it is the last point before sunset.

1)

 [Place Stanislas](#)

From:

<https://www.balloonwiki.org/en/> - **BalloonWiki**

Permanent link:

https://www.balloonwiki.org/en/doku.php/virtual_competition/documentation

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