

Welcome to the 2020 Online HYSPLIT Workshop (DAY 2 of 4)

The broadcast is scheduled to start at:
08:30 Eastern Daylight Time (EDT) = 12:30 UTC

NOAA Air Resources Laboratory
June 22-25, 2020

Day 2, Introduction (8:30 – 8:45)

Dr. Mark Cohen, Lead Scientist, HYSPLIT Modeling Group

- Agenda for today
- Quick recap of logistics
- What height to start a back-trajectory?
- Different ways to use HYSPLIT
- The READY site
- ... And then, on to the course!

Workshop guidance and resources posted at

[Workshop Web Page](https://www.ready.noaa.gov/register/HYSPLIT_hyagenda.php)

**`https://www.ready.noaa.gov/
register/HYSPLIT_hyagenda.php`**

- + this Intro presentation available as a Handout, and on Workshop Web Page**
- + Roland's presentation slides available as a Handout, and on Workshop Web Page**

Agenda – Day 1

UTC	EDT	Agenda Item
12:30 – 12:45	08:30 – 08:45	Introduction and logistics
12:45 – 13:30	08:45 – 09:30	1. Installing HYSPLIT
13:30 – 14:15	09:30 – 10:15	2. Testing the installation
14:15 – 14:30	10:15 – 10:30	Break
14:30 – 15:15	10:30 – 11:15	3. Gridded meteorological data sets
15:15 – 16:00	11:15 – 12:00	4. Trajectory calculations
16:00 – 17:00	12:00 – 13:00	Break
17:00 – 17:45	13:00 – 13:45	4. Trajectory calculations (continued)
17:45 – 19:00	13:45 – 15:00	5. Trajectory options
19:00 – 19:15	15:00 – 15:15	Break
19:15 – 20:20	15:15 – 16:20	6. Trajectory statistics
20:20 – 20:30	16:20 – 16:30	First day wrap-up / questions

Note: all times are approximate

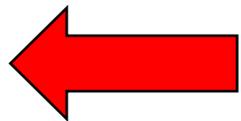
Agenda – Day 2

UTC	EDT	Agenda Item
12:30 – 12:45	08:30 – 08:45	Comments / questions from previous day
12:45 – 14:15	08:45 – 10:15	7. Air Concentration Calculations
14:15 – 14:30	10:15 – 10:30	Break
14:30 – 15:30	10:30 – 11:30	8. Configuring the CAPTEX simulation
15:30 – 16:30	11:30 – 12:30	Break
16:30 – 17:00	12:30 – 13:00	8. Configuring the CAPTEX simulation (continued)
17:00 – 18:30	13:00 – 14:30	9. Air Concentration Parameter Sensitivity
18:30 – 18:45	14:30 – 14:45	Break
18:45 – 19:30	14:45 – 15:30	10. Alternate Display Options
19:30 – 20:20	15:30 – 16:20	11. Pollutant Transformations and deposition <i>(start this section if time permits)</i>
20:20 – 20:30	16:20 – 16:30	Second day wrap-up / questions

Note: all times are approximate

- ❑ **Yes, we know it is going fast, and might seem too fast for some**
 - Normally we give Roland the slowest computer possible, but...
 - It *is* hard to listen, watch, and do your own hand's on modeling
 - One shortcut that might helpful: Whenever the Tutorial says to save a CONTROL or SETUP.CFG file in your working directory for later use, we have also put versions of those same files in: Tutorial > files
 - **May need some adjustment, depending on where you put HYSPLIT and the Tutorial on your computer, but much of what you need is there**
 - At some points, ok to watch as “demo” and then you can go back and do sections of Tutorial on your own; the Tutorial is designed to be done independently, and self-paced, so this is ok
 - What you are getting, though, in this Workshop, different from doing the Tutorial on your own, are Roland's insights and guidance. So in some cases, might be best to listen and watch, rather than get too far behind?
 - Also, we are making daily recordings, and you can watch these once they are ready, and you can pause them when you need to catch up

```
swam_844_tdump.3 x swam_844_tdump.1 x swam_844_tdump.2 x new 2 x captex_control.txt x
1 83 09 25 17
2 1
3 39.90 -84.22 10.0
4 68
5 0
6 10000.0
7 1
8 c:/Tutorial/captex/ ←
9 captex2_wrf27uw.bin
10 1
11 PMCH
12 67000.0
13 3.0
14 00 00 00 00 00
15 1
16 42.0 -78.0
17 0.25 0.25
18 15.0 25.0
19 ./
20 hysplit2.bin
21 1
22 100
23 83 09 25 18 00
24 83 09 28 15 00
25 00 03 00
26 1
27 0.0 0.0 0.0
28 0.0 0.0 0.0 0.0 0.0
29 0.0 0.0 0.0
30 0.0
31 0.0
```



Quick Recap of Logistics

Logistics:

Using the Go-to-Webinar Interface

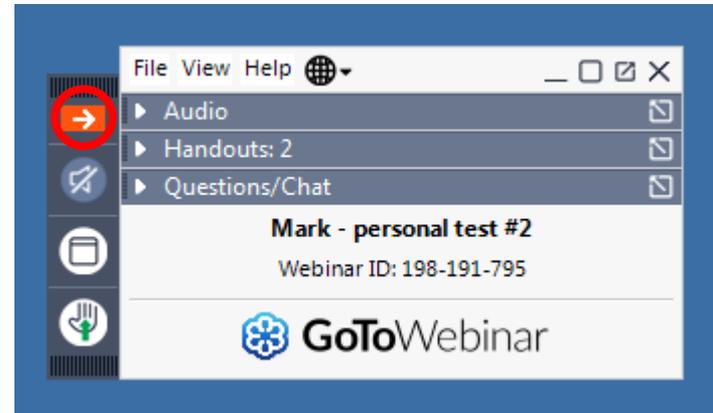
...this short section about the Go-to-Webinar Interface is only relevant if you are live-streaming the Workshop, but not if you are viewing a recording...

Using the Go-to-Webinar Interface



Click the red arrow to toggle between hidden and not-hidden

If the Go-to-Webinar Control Panel is hidden (minimized) it will look like this

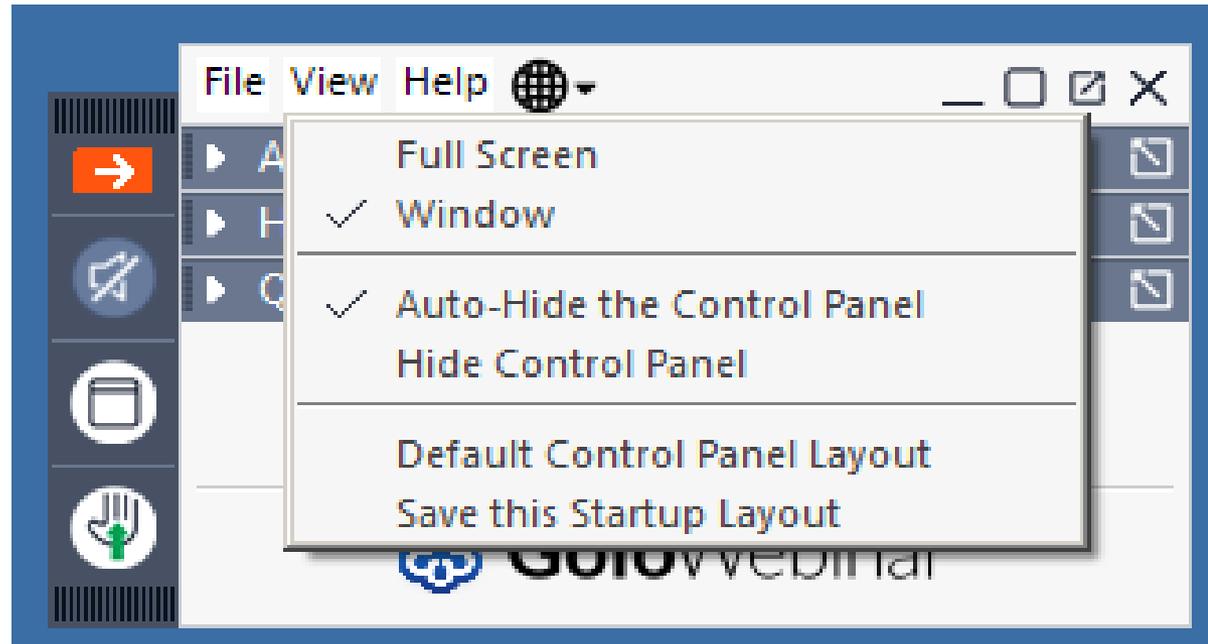


If not hidden, the Go-to-Webinar Control Panel will look something like this

Using the Go-to-Webinar Interface

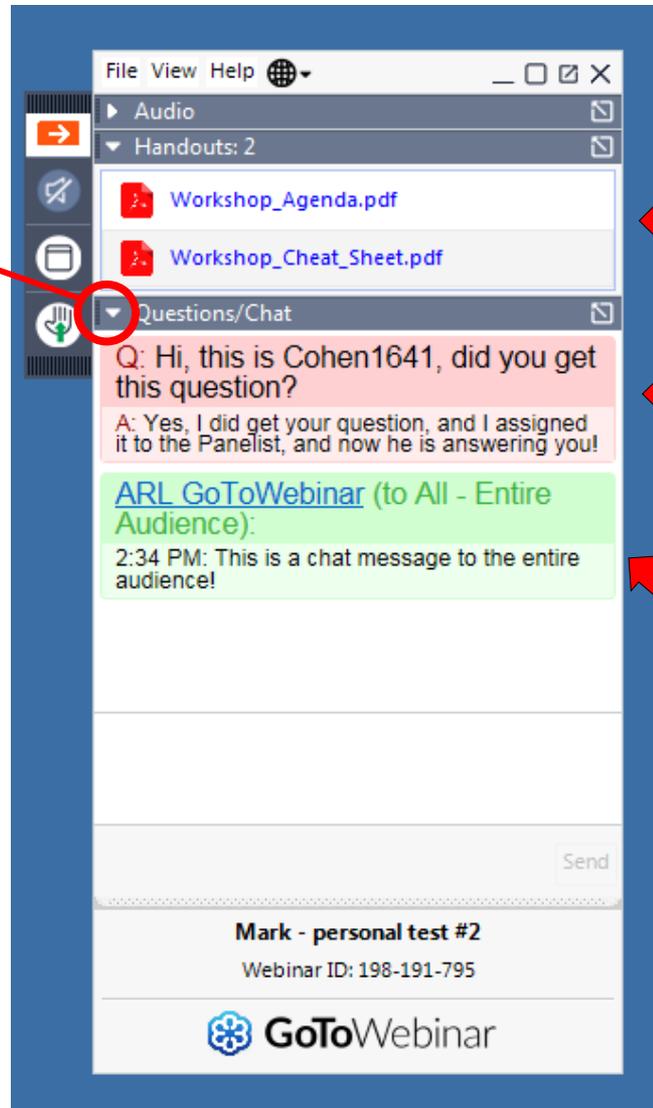
Use the View drop-down menu, for example:

- ✓ to autohide control panel or not
- ✓ to restore the basic default layout if something disappears



Using the Go-to-Webinar Interface

By toggling the little triangle by each Control Panel section, you can expand it or contract it

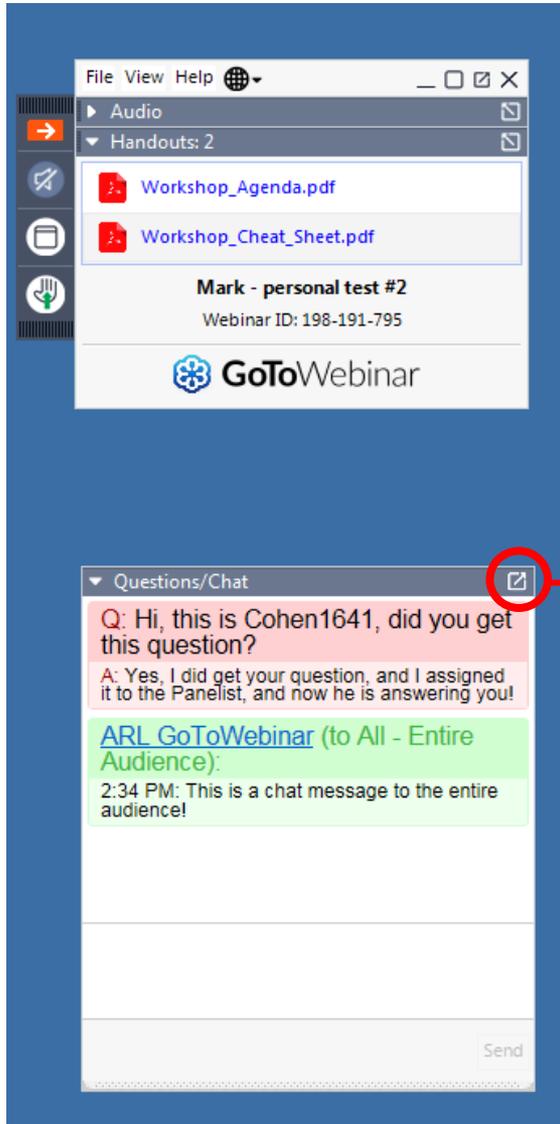


We will put important handouts in this section

When you ask questions of the staff, your questions and answers will be shown in this section

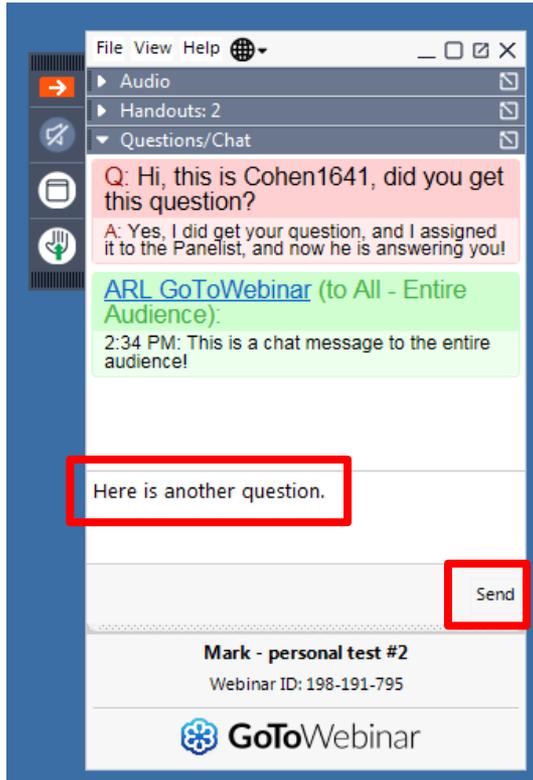
Or when the staff sends the audience a message, you will also see it here

Using the Go-to-Webinar Interface

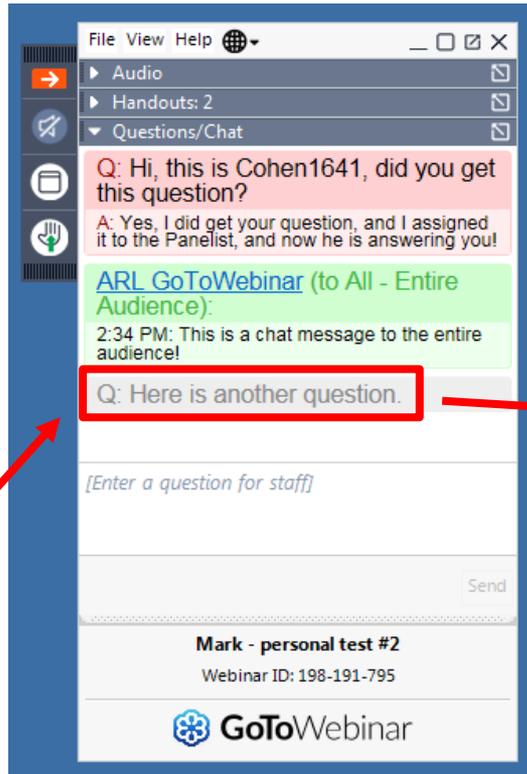


By toggling the little box in the upper right-hand corner of a given section, you can undock it or redock it

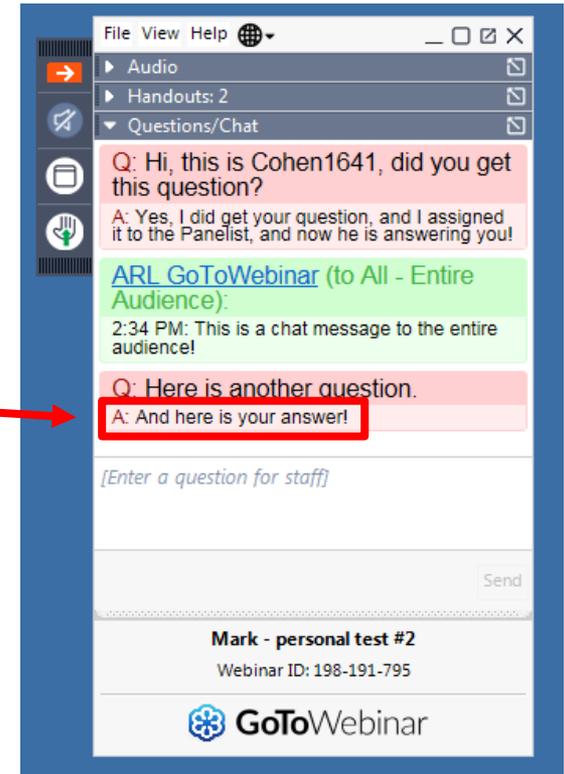
Using the Go-to-Webinar Interface



To ask a question, you type in the empty box, and then hit “send”



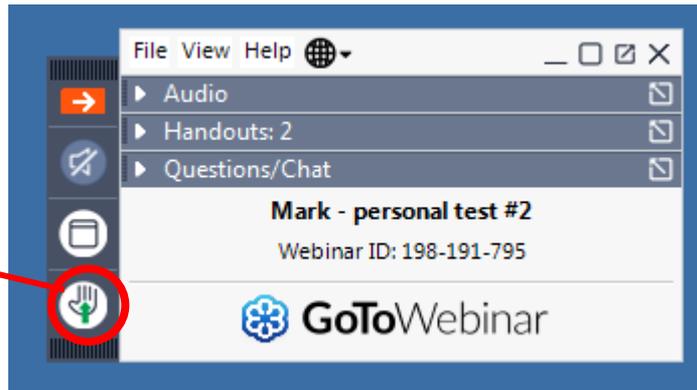
The question you asked should then show up in *your* Control Panel



When we answer it, the answer will show up in *your* Control Panel

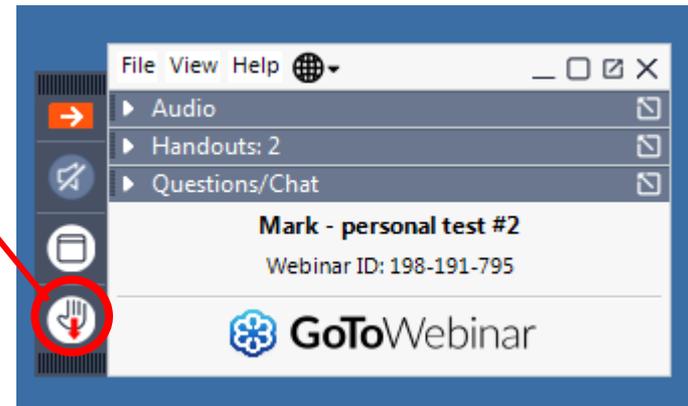
Using the Go-to-Webinar Interface

Sometimes we will ask for a show of hands on a particular question. You click the little hand icon to raise your hand



To lower your hand, you click again on the same icon.

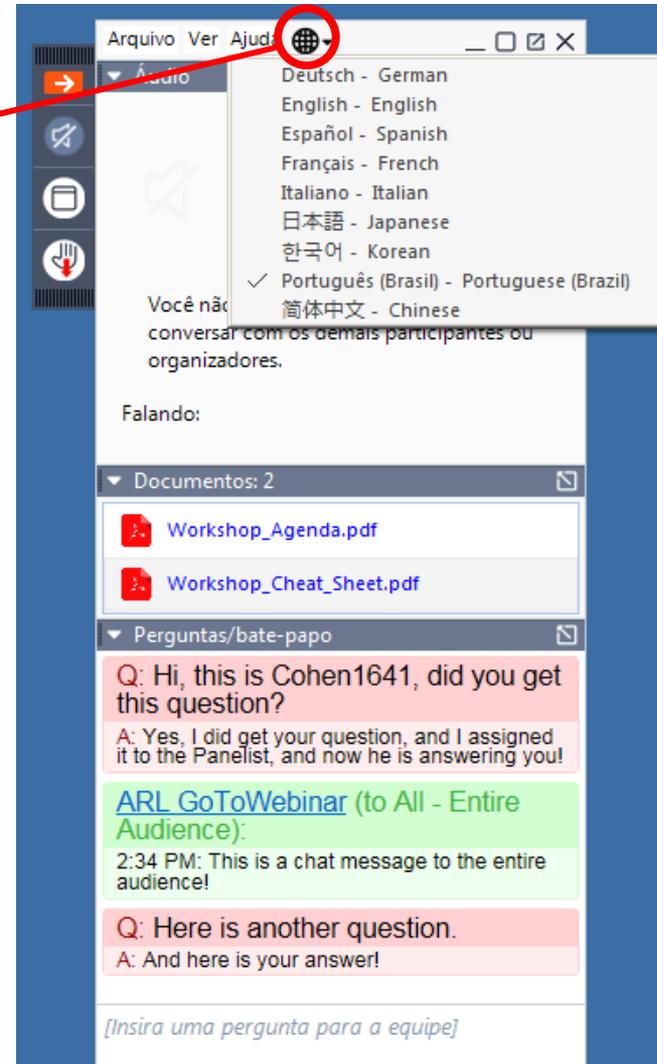
Normally, after we get the answers, we will automatically lower everyone's hand



You are in listen-only mode, so you don't raise your hand to ask a question.

Using the Go-to-Webinar Interface

You can click on the “globe” icon to change the language of the Control Panel. Although Questions and Answers will be in English



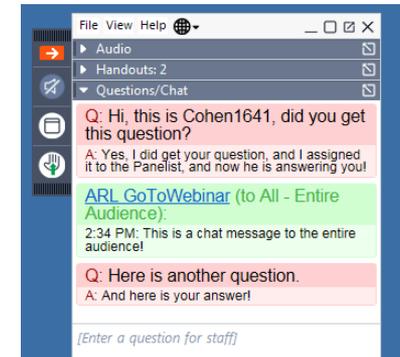
Logistics:

Asking Questions

Asking Questions

- Ask general questions about the Webinar or Go-to-Webinar in the Control Panel that was just discussed

...if viewing a recording, can ask general questions by emailing arl.gotowebinar@noaa.gov



- Ask questions about HYSPLIT, the Graphical User Interface (GUI), and the Tutorial in the [HYSPLIT Forum](#)

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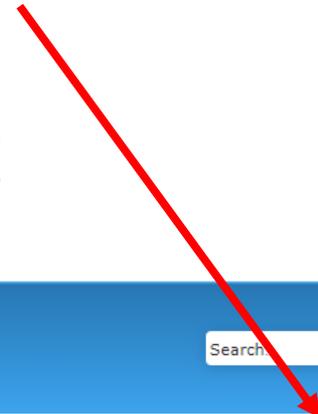
[Mark subforums read](#)

FORUM	TOPICS	POSTS	LAST POST
Installation Post questions about HYSPLIT installation.	1	3	? Re: Failure in unzipping the ... by sonny.zinn June 3rd, 2020, 10:33 am
Rehearsal This forum will be used by the ARL staff during rehearsals. All posts under this forum will be deleted after the rehearsals.	0	0	No posts

<https://hysplitbbs.arl.noaa.gov/viewforum.php?f=36>

Asking Questions

If you have not already registered for the HYSPLIT Forum, you can do so easily by clicking on the “Register” icon at <https://hysplitbbs.arl.noaa.gov/>



The screenshot shows the top navigation bar of the HYSPLIT Forum. On the left, there is a 'phpBB' logo with the tagline 'creating communities'. Next to it is the forum title 'HYSPLIT Forum: hysplitbbs.arl.noaa.gov' and a subtitle 'A Forum for HYSPLIT Dispersion Model Users to Communicate Questions, Problems, and Ideas for Upgrades, etc.'. On the right side of the header, there is a search bar with a magnifying glass icon and a gear icon. Below the search bar, there are two buttons: 'Register' with a document icon and 'Login' with a power icon. The 'Register' button is highlighted with a red box. In the bottom left corner of the header, there are links for 'Quick links' and 'FAQ'. In the bottom right corner, there is a 'Board index' link. At the very bottom right of the page, there is a timestamp: 'It is currently June 7th, 2020, 7:32 pm'.

Asking Questions

HYSPLIT Forum: hysplitbbs.arl.noaa.gov
 A Forum for HYSPLIT Dispersion Model Users to Communicate Questions, Problems, and Ideas for Upgrades, etc.

Search...

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It is currently June 18th, 2020, 6:36 pm

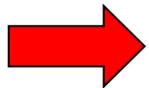
Last visit was: June 16th, 2020, 10:13 am

[Mark forums read](#)

HYSPLIT	TOPICS	POSTS	LAST POST
Users General questions and postings pertaining to the use of HYSPLIT regardless of the platform. For platform specific questions, use the HYSPLIT Platform forums.	190	715	Re: Meteorological Data by barbara.stunder May 26th, 2020, 8:52 am
Developers Questions and postings pertaining to the development of HYSPLIT, feature enhancements, and HYSPLIT internals. HYSPLIT source code and algorithms are discussed here.	19	70	Trying to Recreate This image by munleyj May 11th, 2020, 9:48 am
Bugs Post any defects you find in the HYSPLIT software here. The HYSPLIT Developers carefully monitor this list and will work diligently to repair any reported problems. When posting a bug report, please specify both the HYSPLIT version and operating system you are using.	42	145	Re: question about DATEM form... by lida May 18th, 2020, 9:37 pm
Announce Announcements pertaining to HYSPLIT, training materials, dispersion related jobs or research positions, or related software. This list is moderated and will not be used for any discussion.	25	47	Re: TAPPAS by alicec January 27th, 2020, 12:26 pm



Radiological Post questions, comments and links to research (research papers, web sites, etc) involving HYSPLIT and radiological nuclides. This section is also to facilitate collaborations between researchers involved in radiological nuclide transport and dispersion.	12	38	Re: Fukushima Calculation by ariel.stein September 20th, 2018, 9:25 am
Cluster Analysis Topics about the trajectory clustering program for HYSPLIT.	31	133	Re: Generate cluster trajecto... by barbara.stunder August 26th, 2019, 7:35 am



FORUM	TOPICS	POSTS	LAST POST
HYSPLIT Workshop	17	34	? Re: Moderator test by alicec June 12th, 2020, 11:30 am

Asking Questions


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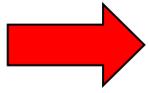
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HYSPLIT Workshop

Mark subforums read

FORUM	TOPICS	POSTS	LAST POST
 2020 HYSPLIT Workshop Questions Questions for the upcoming 2020 Online HYSPLIT Workshop.	6	11	? Re: Moderator test by alicec  June 12th, 2020, 11:30 am
 2019 HYSPLIT Workshop Questions During the four weeks of the 2019 HYSPLIT Workshop, users will be able to post questions on the week's topics to this Forum and model developers will try to answer them as soon as possible.	3	5	Re: Depositions calculated wi... by ariel.stein  June 17th, 2019, 3:58 pm



[New Topic](#)  Search this forum...  

Mark topics read • 8 topics • Page 1 of 1

TOPICS	REPLIES	VIEWS	LAST POST
 Open slots? by tomr » May 28th, 2020, 11:25 am	1	38	by sonny.zinn  May 29th, 2020, 11:41 am
 <u>Is there any plan of tutorial or workshop in 2020?</u> by lida » December 3rd, 2019, 3:37 am	3	1034	by McP82  December 27th, 2019, 9:19 am
 HYSPLIT Workshop in Huelva, Spain, 7-9 October, 2019 by glenn.rolph » September 16th, 2019, 2:22 pm	2	2243	by McP82  December 27th, 2019, 9:18 am
 2019 HYSPLIT Workshop by glenn.rolph » February 28th, 2019, 12:08 pm	1	1644	by glenn.rolph  April 8th, 2019, 2:27 pm
 HYSPLIT Tutorial Videos by glenn.rolph » April 17th, 2018, 8:58 am	0	3825	by glenn.rolph  April 17th, 2018, 8:58 am
 2018 HYSPLIT workshop in Europe by ariel.stein » February 1st, 2018, 5:31 pm	0	3286	by ariel.stein  February 1st, 2018, 5:31 pm
 2017 HYSPLIT Workshop by glenn.rolph » March 16th, 2017, 8:28 am	2	4044	by glenn.rolph  October 19th, 2017, 11:27 am
 2016 PC HYSPLIT Workshop by glenn.rolph » February 18th, 2016, 2:09 pm	1	4086	by glenn.rolph  March 15th, 2016, 11:43 am

Asking Questions

<https://hysplitbbs.arl.noaa.gov/viewforum.php?f=36>

You can post your question in the appropriate section, based on where in the Tutorial your question refers to.

phpBB® HYSPPLIT Forum: hysplitbbs.arl.noaa.gov
A Forum for HYSPLIT Dispersion Model Users to Communicate Questions, Problems, and Ideas for Upgrades, etc.

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2020 HYSPLIT Workshop Questions Mark subforums read

FORUM	TOPICS	POSTS	LAST POST
Rehearsal <small>This forum will be used by the ARL staff during rehearsals. All posts under this forum will be deleted after the rehearsals.</small>	1	2	Re: Moderator test by alicec June 12th, 2020, 11:30 am
1. Installing HYSPLIT <small>Post questions about HYSPLIT installation.</small>	4	8	? Re: Failure in unzipping the ... by sonny.zinn June 9th, 2020, 1:45 pm
2. Testing the installation	1	1	? TOPIC_UNAPPROVED_FORUM
3. Gridded meteorological data files	0	0	No posts
4. Trajectory calculations	0	0	No posts
5. Trajectory options	0	0	No posts
6. Trajectory statistics	0	0	No posts
7. Air concentration calculations	0	0	No posts
8. Configuring the CAPTEX simulation	0	0	No posts
9. Air concentration parameter sensitivity	0	0	No posts
10. Alternate display options	0	0	No posts
11. Pollutant transformations and deposition	0	0	No posts
12. Air concentration uncertainty	0	0	No posts
13. Source attribution methods	0	0	No posts
14. Wildfire smoke and dust storms	0	0	No posts
15. Radioactive pollutants and dose	0	0	No posts
16. Volcanic eruptions with gravitational settling	0	0	No posts
17. Custom simulations	0	0	No posts

Asking Questions

You can look to see if there already is a similar question, and if not, you can create a **New Topic**

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A Forum for HYSPPLIT Dispersion Model Users to Communicate Questions, Problems, and Ideas for Upgrades, etc.

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1. Installing HYSPPLIT

[New Topic](#)

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TOPICS	REPLIES	VIEWS	LAST POST
I cannot Run Hysplit after following the installaction <small>by Cares » June 18th, 2020, 12:30 pm</small>	1	3	<small>by MarkCohen » June 18th, 2020, 6:57 pm</small>
Desktop icon Run Hysplit not working ? <small>by Claudia_Rivera » June 18th, 2020, 2:01 pm</small>	0	0	<small>by Claudia_Rivera » June 18th, 2020, 2:01 pm</small>
Failure in unzipping the contents of 'Tutorial.zip' <small>by flaviavieira » June 2nd, 2020, 10:02 am</small>	3	300	<small>by sonny.zinn » June 9th, 2020, 1:45 pm</small>
tutorial/index.html not working <small>by kschwager » May 28th, 2020, 8:58 am</small>	1	57	<small>by sonny.zinn » May 29th, 2020, 11:48 am</small>

[New Topic](#)

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Jump to

Asking Questions

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1. Installing HYSPLIT

POST A NEW TOPIC

Subject:

B **I** **U** **Q** **</>** **☰** **☰** **✳** **📷** **🔗** **🔥** Normal ▾

Add your question text in this box.

Please avoid putting any links in your post.

Do not start any line with two dashes "--"

Smilies

BBCode is ON
[img] is ON
[flash] is OFF
[url] is ON
Smilies are ON

Save draft Preview Submit

Options Attachments Poll creation

Disable BBCode
 Disable smilies
 Do not automatically parse URLs
 Attach a signature (signatures can be altered via the UCP)
 Notify me when a reply is posted
 Lock topic

[Board index](#)

The team [Members](#) [Delete all board cookies](#) All times are UTC-04:00

you can add attachments, e.g., one or more screen shots, and/or a CONTROL file and/or a SETUP.CFG file

Add your question text in this box.

Please avoid putting any links in your post.

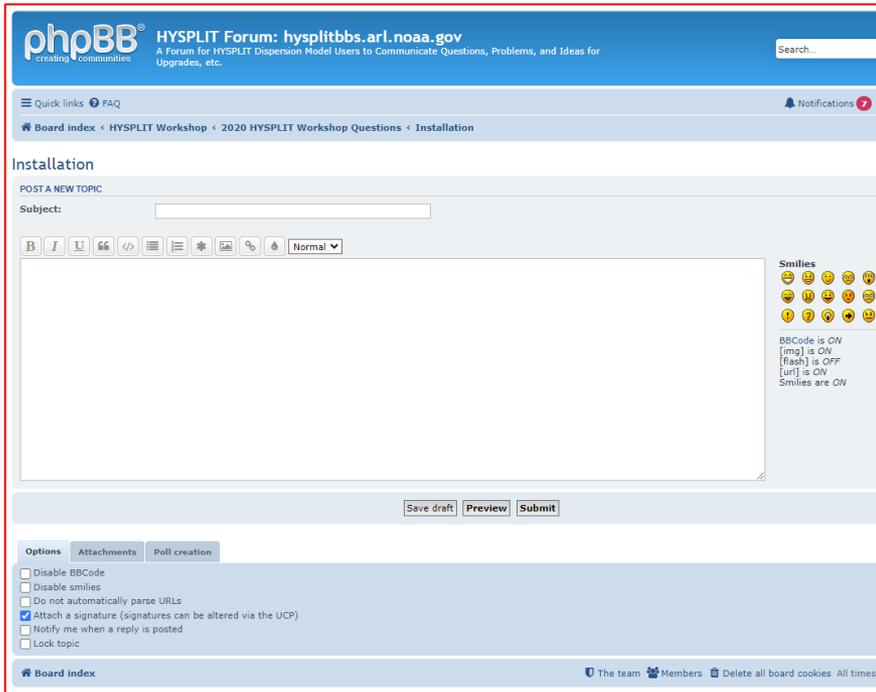
Do not start any line with two dashes "--"

Once you submit your post, it can be approved and then answered by ARL staff



Asking Questions

Why are we asking to use the HYSPLIT Forum for GUI and model-related questions?

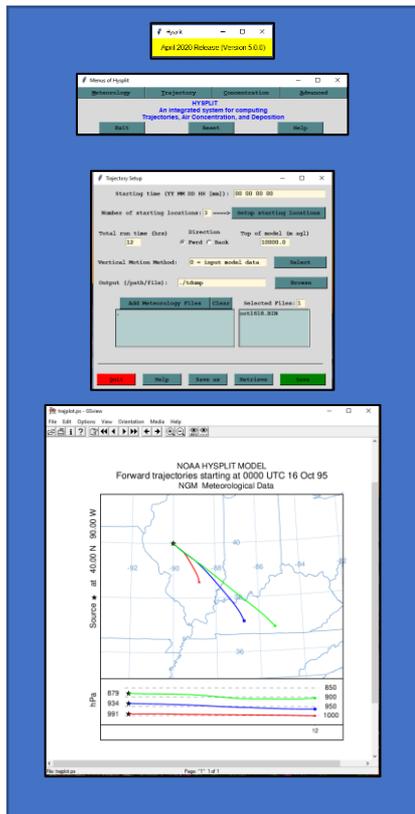


- You can ask more detailed questions, e.g., can attach screen shots and/or various input/output files
- We can provide more detailed answers
- There can be an exchange back and forth, if needed
- Can see other questions that have already been asked – in case you have a similar question
- We can give you a link to the answer to a similar question
- Accessible to people just viewing the recordings
- As part of the HYSPLIT community, we hope you will use the Forum moving forward

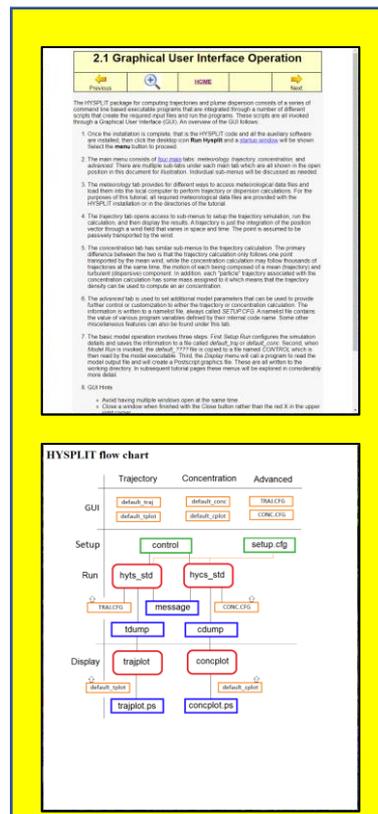
Screen Considerations

Screen Considerations

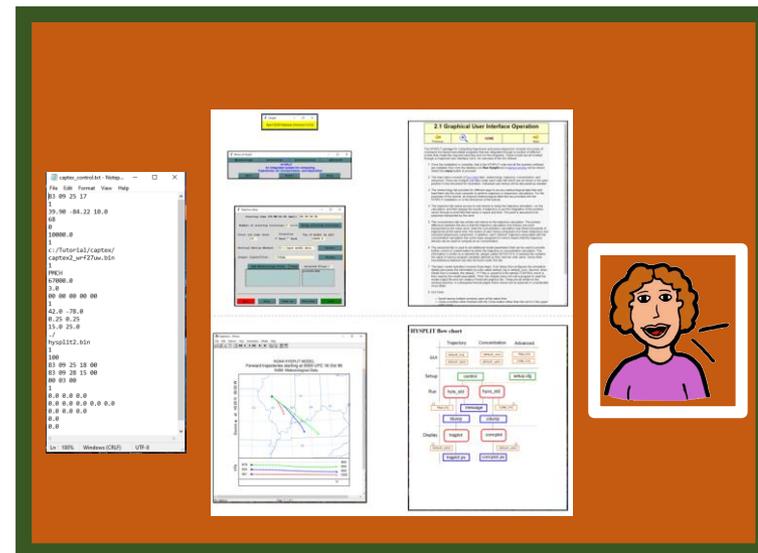
Screen area devoted to your own hands-on HYSPLIT modeling



Screen area devoted to your own viewing of Tutorial



Screen area devoted to viewing the Webinar



We recommend that a 2nd screen be used, if this is possible, e.g., to display the Workshop Webinar video. In this way, the participant can carry out their hands-on HYSPLIT work, in conjunction with the Workshop, and still conveniently view the ongoing, associated instructions.

Recordings

Recordings

Access recordings from the Workshop Web Page:
https://www.ready.noaa.gov/register/HYSPLIT_hyagenda.php

- ❑ Recordings of each day's on-line sessions are being created, *but processing takes significant time (~8+ hours after a day's session ends)*
- ❑ Two identical versions:
 - [HYSPLIT Workshop Channel](#) (hosted by Go-to-Webinar)
 - Click Video > Go-to-Webinar registration > Enter name & email > View video
 - [Workshop Web Page](#) – once the video is posted on our site, the corresponding item in the list below will turn into a link you can click to view
 - Placeholder for Day 1 video recording
 - [Day 1 video recording](#)
 - Placeholder for Day 3 video recording
 - Placeholder for Day 4 video recording

Recordings

[HYSPPLIT Workshop Channel](#)

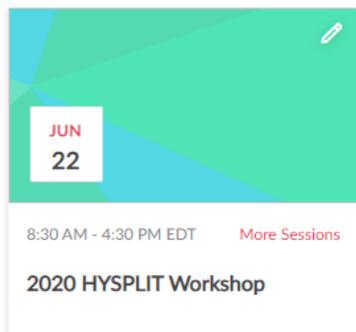
hosted by Go-to-Webinar

HYSPPLIT Workshop

Recordings from each day of the Online 2020 HYSPPLIT Workshop, held June 22-25, 2020.

Share this page    

Live / Upcoming



While video is processing, it will show up in “Live/Upcoming” section. It cannot be viewed yet.

Recently Added



Once it is ready for viewing, it will show up in “Recently Added” section.

Virtual Posters

Virtual Posters

Access posters from the Workshop Web Page:
https://www.ready.noaa.gov/register/HYSPLIT_hyagenda.php

- ❑ Ryan, R., K. Kelleher, N. Murphy, and C. Burbidge, 2020: [The use of HYSPLIT by the Environmental Protection Agency \(Ireland\) to predict the transportation of smoke and Cs-137 from wildfires near the Chernobyl Nuclear Power Plant.](#)
- ❑ Ionov, D., 2020: [Application of HYSPLIT to simulate urban pollution plume generated by the megacity of St. Petersburg, Russia.](#)
- ❑ Baraldo, F. and Coauthors, 2020: [PM 2.5 chemical composition in Buenos Aires by an ensemble of analytical techniques.](#)
- ❑ Diemoz, H., T. Magri, G. Pession, C. Tarricone, I. Tombolato, and M. Zublena, 2020: [Applications of backtrajectory analyses at the Alpine site of Aosta, Italy.](#)
- ❑ Preciado, M., E. Solarte, A. Pena, and C. Galindez, 2020: [Monitoring the behavior of atmospheric aerosols during a biomass burning event.](#)

Different Ways to Use HYSPLIT

Different Ways to Use HYSPLIT

1. Online - READY Website: <https://www.ready.noaa.gov/index.php>

- Specialized applications (e.g., Volcanoes, Fires, Locusts, ...)
- Researcher access; public access
- Can use met data directly on our servers, without downloading it

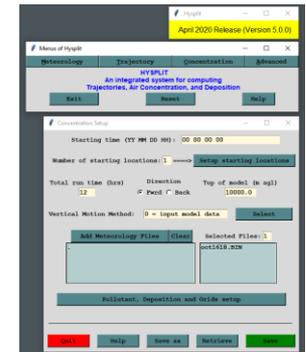
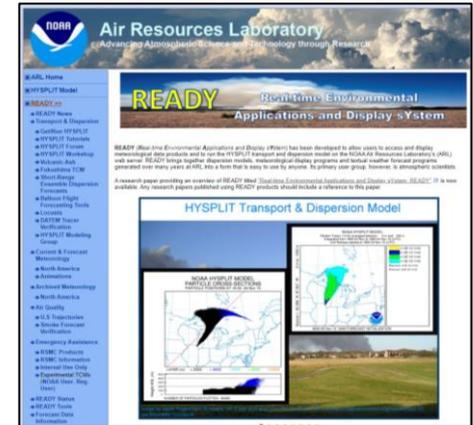
2. Download model (free) and run on your local computer using the Graphical User Interface (GUI)

- This Workshop deals almost exclusively with the GUI
- Menu driven, context sensitive help, integrated applications
- Can generally do more with the GUI than you can online, as we have imposed some limitations due to computational resource constraints
- Download (free) forecast and archive met data to run HYSPLIT

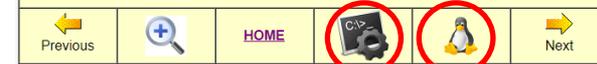
3. Use the same model you downloaded to run on your local computer using the Command Line (terminal) and scripts

- At a basic level, a script is just a series of command line entries
- More features available from command line / scripts than in GUI
- Re-do runs by re-running a script; easy to change parameters
- And you have a record of exactly what you did.

- **But the GUI is a great way to learn how to use HYSPLIT.** Most experienced users will use the GUI when trying something new, and only try a script once they understand what is happening in the GUI.



4.1 The Trajectory Calculation



```
echo "$syr $smo $sda $sht"    ">>CONTROL
echo "1"                      ">>CONTROL
echo "$olat $olon $olvl"     ">>CONTROL
echo "$run"                  ">>CONTROL
echo "0"                     ">>CONTROL
echo "$ztop"                 ">>CONTROL
echo "1"                     ">>CONTROL
echo "$MET/"                 ">>CONTROL
echo "$data"                 ">>CONTROL
echo "$OUT/"                 ">>CONTROL
echo "tdump"                 ">>CONTROL
```

Thanks to the

IT Team and the **HYSPLIT Team**

of the NOAA Air Resources Laboratory
for providing behind-the-scenes support
throughout this Workshop

*...we will try our best to answer all of your questions,
but we ask for your patience, as there are 100's of
people in this Workshop and only a few of us...*

Course Instructor

Roland Draxler

NOAA Air Resources
Laboratory (retired)



A little bit more about the READY site



Air Resources Laboratory
Advancing Atmospheric Science and Technology through Research

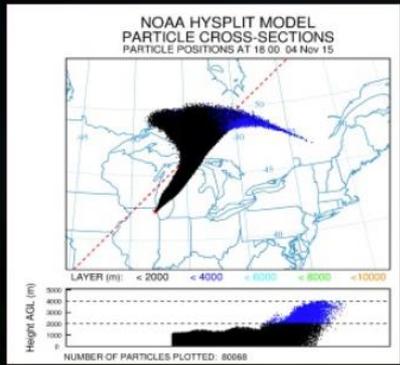


- ▣ ARL Home
- ▣ HYSPLIT Model
- ▣ **READY >>**
 - READY News
 - Transport & Dispersion
 - Get/Run HYSPLIT
 - HYSPLIT Tutorials
 - HYSPLIT Forum
 - HYSPLIT Workshop
 - Volcanic Ash
 - Fukushima TCM
 - Short-Range Ensemble Dispersion Forecasts
 - Balloon Flight Forecasting Tools
 - Locusts
 - DATEM Tracer Verification
 - HYSPLIT Modeling Group
 - Current & Forecast Meteorology
 - North America
 - Animations
 - Archived Meteorology
 - North America
 - Air Quality
 - U.S Trajectories
 - Smoke Forecast Verification
 - Emergency Assistance
 - RSMC Products
 - RSMC Information
 - Internal Use Only
 - Experimental TCMs (NOAA User, Reg. User)
 - READY Status
 - READY Tools
 - Forecast Data Information

READY (*Real-time Environmental Applications and Display sYstem*) has been developed to allow users to access and display meteorological data products and to run the HYSPLIT transport and dispersion model on the NOAA Air Resources Laboratory's (ARL) web server. READY brings together dispersion models, meteorological display programs and textual weather forecast programs generated over many years at ARL into a form that is easy to use by anyone. Its primary user group, however, is atmospheric scientists.

A research paper providing an overview of READY titled "[Real-time Environmental Applications and Display sYstem: READY](#)" is now available. Any research papers published using READY products should include a reference to this paper.

HYSPLIT Transport & Dispersion Model



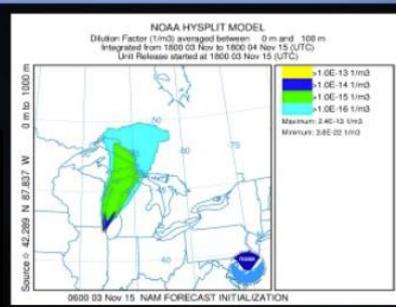




Image by Jason Rogers from St Albans, UK (Clear sky apart from the model) via BY 2.0 (http://creativecommons.org/licenses/by/2.0) via Wikimedia Commons

HYSPLIT Transport & Dispersion Model

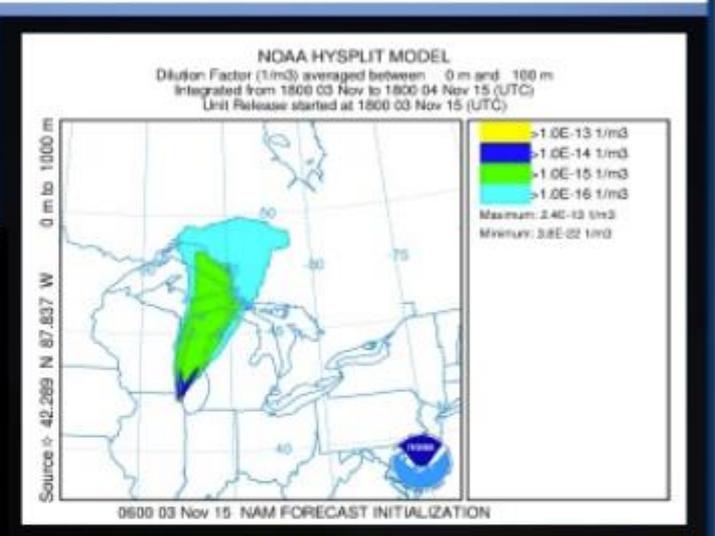
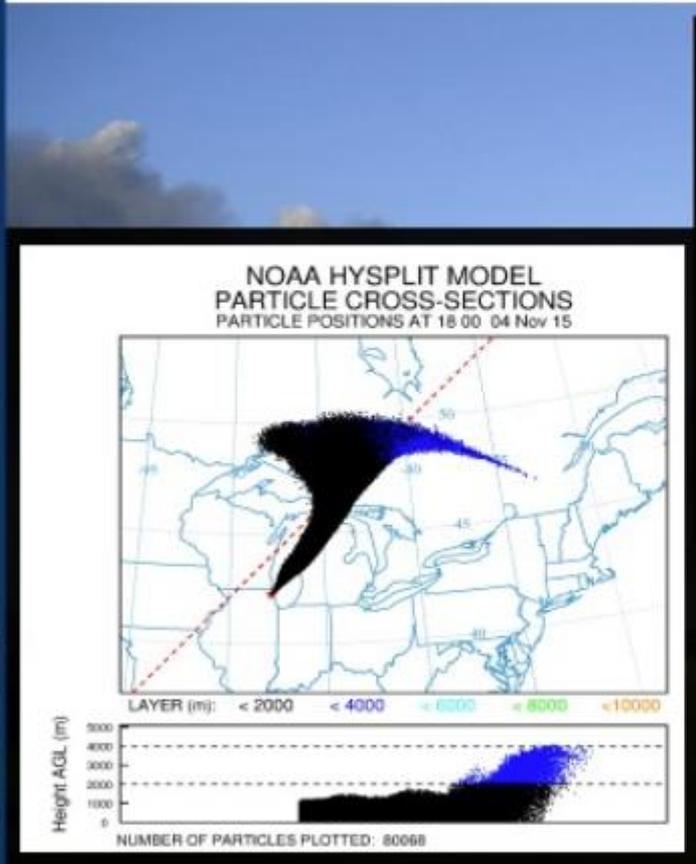
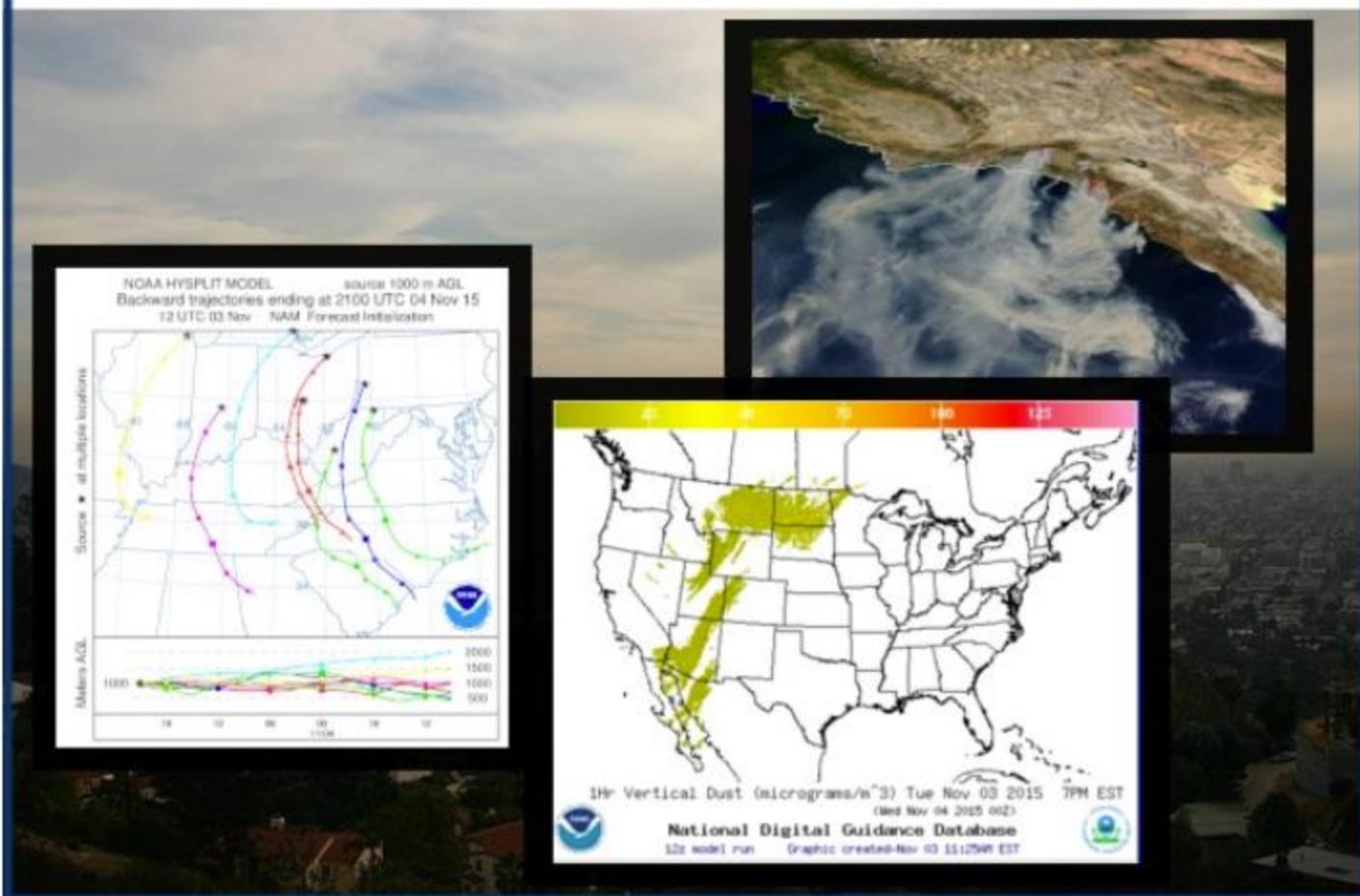


Image by Jason Rogers from St Albans, UK (Clear skies apart from the smoke plume) [CC BY 2.0 (<http://creativecommons.org/licenses/by/2.0/>)] via Wikimedia Commons

Air Quality Products



Emergency Assistance



NOAA HYSPLIT MODEL
 Concentration (mBq/m³) averaged between 0 m and 500 m
 Integrated from 1800 17 Mar to 0000 18 Mar 11 (UTC)
 Cpr Release started at 1800 11 Mar 11 (UTC)

Red	>1.0E+03 mBq/m ³
Orange	>5.0E+02 mBq/m ³
Yellow	>2.0E+02 mBq/m ³
Light Green	>1.0E+02 mBq/m ³
Green	>5.0E+01 mBq/m ³
Light Blue	>2.0E+01 mBq/m ³
Blue	>1.0E+01 mBq/m ³
Purple	>5.0E+00 mBq/m ³
Dark Purple	>1.0E+00 mBq/m ³
Black	>5.0E-01 mBq/m ³
Dark Blue	>2.0E-01 mBq/m ³
Light Blue	>1.0E-01 mBq/m ³

Maximum: 2.3E+03 (identical as a square)
 Minimum: 7.0E-11

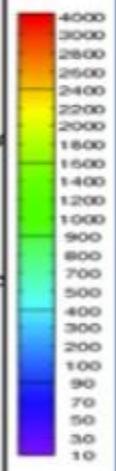
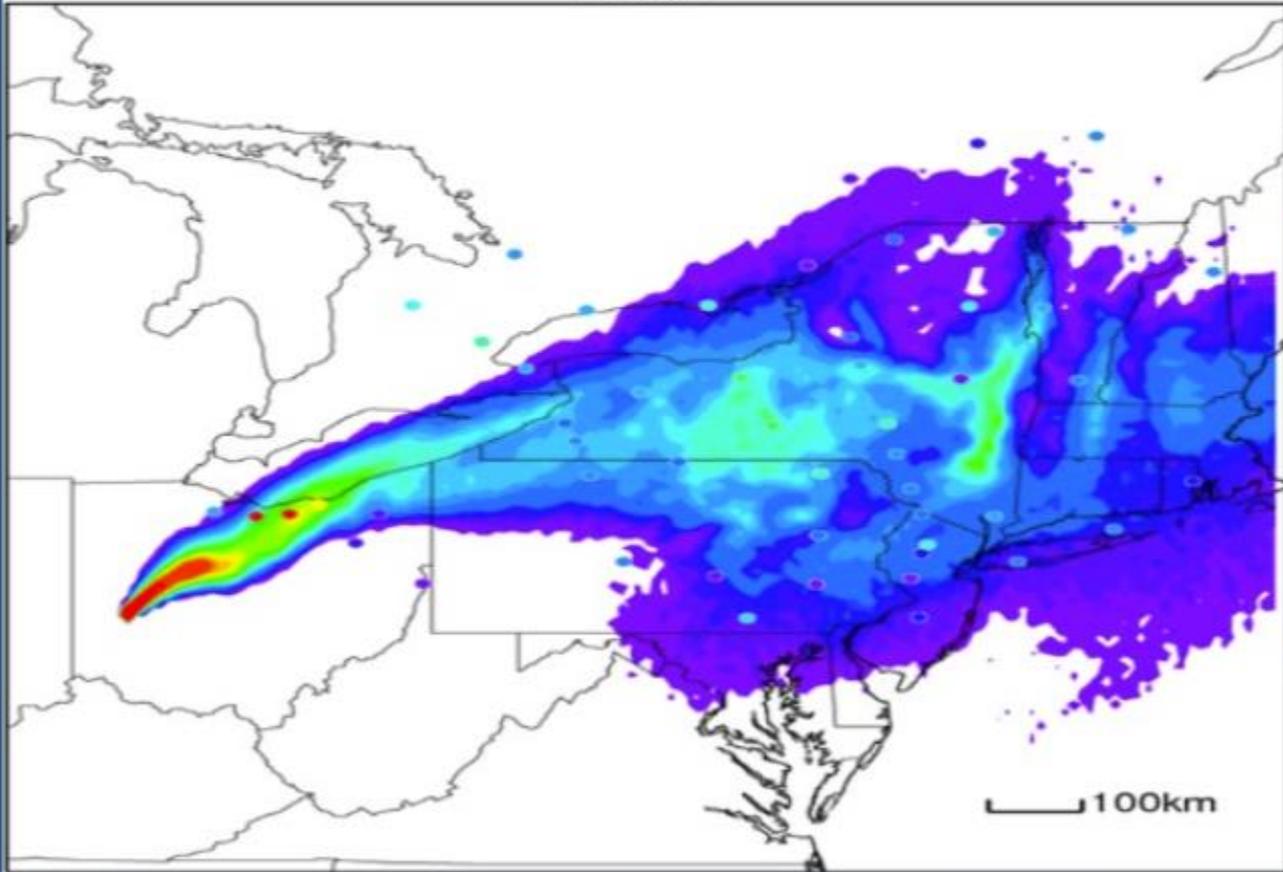
GHDA METEOROLOGICAL DATA

By English: Petty Officer 2nd Class Justin Stumberg [Public domain], via Wikimedia Commons

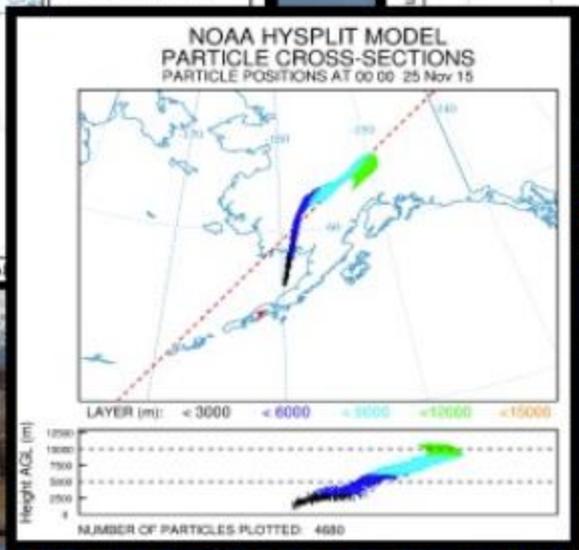
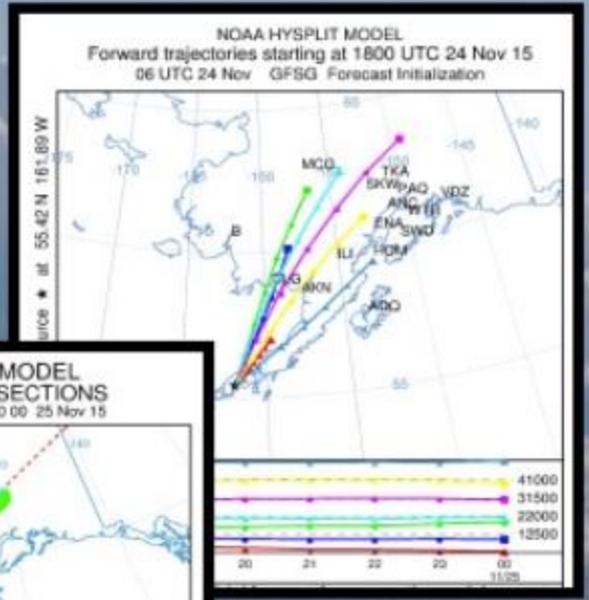
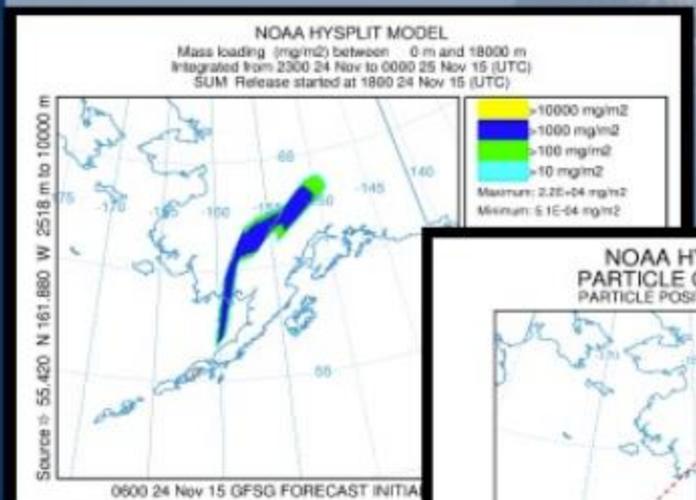
DATEM Tracer Verification



captex2

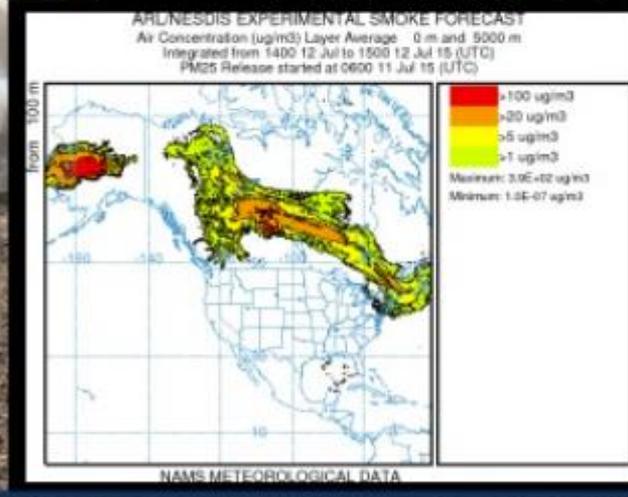
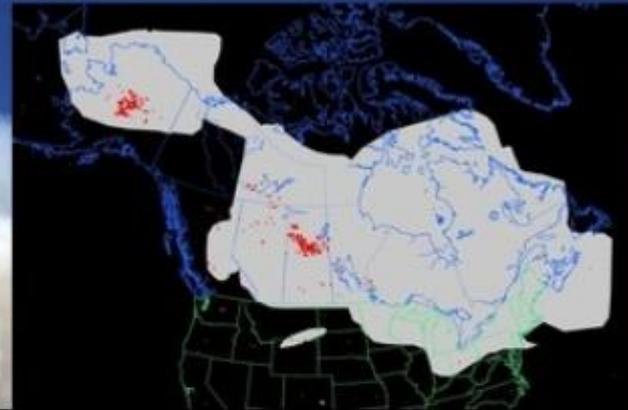


HYSPPLIT Volcanic Ash

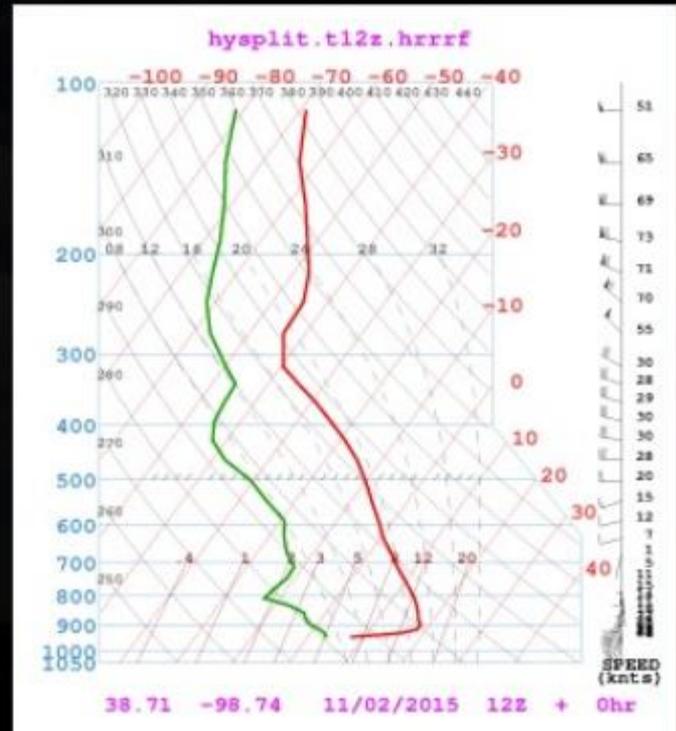


By: [Name] (Own work) / CC BY-SA 4.0 / https://commons.wikimedia.org/w/index.php?curid=11111111

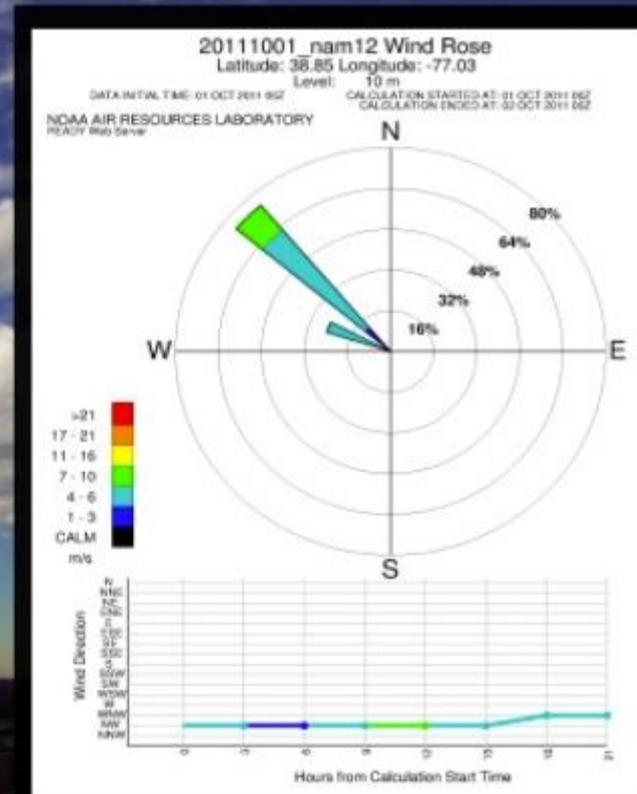
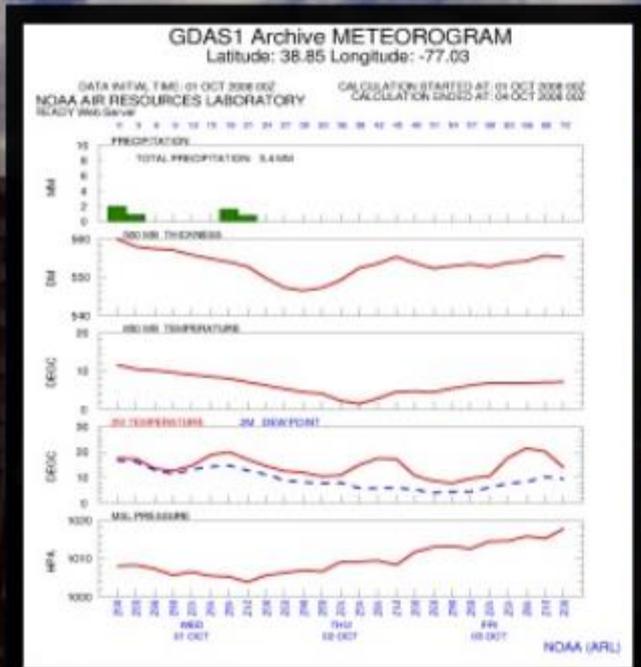
Wildfire Smoke Forecasting



Current & Forecast Meteorology



Archived Meteorology





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- ▣ HYSPLIT Model
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 - North America
 - Animations
 - **Archived Meteorology**



Archived Model Graphics

Choose a forecast location by entering a 3 or 4-character station identifier or a 6-digit WMO index number or a latitude/longitude pair and then click the Continue button, or by clicking on the location in the map. You will be taken to the model products section. Information on ARL's data archive is available at <https://www.ready.noaa.gov/archives.php>.

Select a Location

Using a Code Identifier

Airport or WMO ID: [Search for Code](#)

OR By Selecting a U.S. or World City

Or choose a city

OR by Latitude & Longitude

Latitude (degrees) [Convert Deg/Min/Sec into Decimal Degrees](#)

Longitude (West < 0)

OR click a location on the map below.



Air Resources Laboratory

Advancing Atmospheric Science and Technology through Research

▣ ARL Home

▣ HYSPLIT Model

▣ READY

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 - RSMC Products
 - RSMC Information
 - Internal Use Only
 - Experimental TCMs (NOAA User, Reg. User)
- READY Status
- READY Tools
- Forecast Data Information



Overview

The National Weather Service's National Centers for Environmental Prediction (NCEP) runs a series of computer analyses and forecasts operationally. NOAA's Air Resources Laboratory (ARL) routinely uses NCEP model data for use in air quality transport and dispersion modeling calculations. In 1989 ARL began to archive some of these datasets for future research studies. ARL has in the past, or is presently archiving the following NCEP datasets, which can be retrieved via ftp by clicking on the name of the dataset.

For further information on model changes see the following web sites:

- <https://www.nco.ncep.noaa.gov/pmb/>
- <https://www.nco.ncep.noaa.gov/pmb/changes/>
- <https://www.emc.ncep.noaa.gov/modelinfo/index.html>

Currently Available Data

- **NAMS Hybrid sigma-pressure archive (CONUS, Alaska, Hawaii, 2010-)**
 - FTP Data
 - [NOAA ARL FTP Server](#)
 - [Readme file](#)
 - [CONUS grid domain map](#)
 - [Alaska grid domain map](#)
 - [Hawaii grid domain map](#)
 - [Alaska grid domain map \(before 03/21/2017\)](#)
 - [Hawaii grid domain map \(before 03/21/2017\)](#)
- **GDAS one-degree archive (Dec 2004 - present)**
 - FTP Data
 - [NOAA NOMADS Server \(recent files only\)](#)

Meteorological Datasets Available from NOAA ARL Archives*

(<https://ready.arl.noaa.gov/archives.php>)

	Dataset	Horizontal Resolution (km- approx.)	Full-grid dimensions	Temporal resolution (hrs)	Vertical Levels	Period of each file	Size of each file (GB)	Total size for one month of data (GB)	Availability
North American**	HRRR-3km	3	1799 x 1059	1	37	¼ day	3.2	390	Jun 2015 -> present
	NAMS-12km Hybrid	12 km: Conus 12 km: Alaska 2 km: Hawaii		1	40	1 day	1.0 0.64 0.71	30 19 21	2010 -> present
	NAM-12km	12	614 x 428	3	27	1 day	0.395	12	May 2007 -> present
	WRF-ARW-27km	27	216 x 174	1	35	1 day	0.210	6.4	1980 -> present
	NARR-32km	32	309 x 237	3	24	1 month	2.8	2.8	1979 -> 2019
	EDAS-40km	40	185 x 129	3	27	½ month	0.6	1.2	2004 -> 2018
Global	GFS - 0.25°	27	1440 x 721	3	56	1 day	2.7	82	Jun 2019 -> present
	GDAS - 0.5°	55	720 x 361	3	56	1 day	0.468	14	Sep 2007 -> Jun 2019]
	GDAS - 1°	111	360 x 181	3	24	1 week	0.571	2.5	Dec 2004 -> present
	Global Reanalysis - 2.5°	278	144 x 73	6	18	1 month	0.11	0.11	1948 -> present

* These are the most commonly used datasets, but there are other datasets available in the archive, ** All North American datasets cover the Continental United States, but have varying coverage of Canada, Mexico, and adjacent oceanic regions. *** WRF-27km data will most likely continue to be updated.

Schedule for Each Day

(subject to change)

Agenda – Day 1

UTC	EDT	Agenda Item
12:30 – 12:45	08:30 – 08:45	Introduction and logistics
12:45 – 13:30	08:45 – 09:30	1. Installing HYSPLIT
13:30 – 14:15	09:30 – 10:15	2. Testing the installation
14:15 – 14:30	10:15 – 10:30	Break
14:30 – 15:15	10:30 – 11:15	3. Gridded meteorological data sets
15:15 – 16:00	11:15 – 12:00	4. Trajectory calculations
16:00 – 17:00	12:00 – 13:00	Break
17:00 – 17:45	13:00 – 13:45	4. Trajectory calculations (continued)
17:45 – 19:00	13:45 – 15:00	5. Trajectory options
19:00 – 19:15	15:00 – 15:15	Break
19:15 – 20:20	15:15 – 16:20	6. Trajectory statistics
20:20 – 20:30	16:20 – 16:30	First day wrap-up / questions

Note: all times are approximate

Agenda – Day 2

UTC	EDT	Agenda Item
12:30 – 12:45	08:30 – 08:45	Comments / questions from previous day
12:45 – 14:15	08:45 – 10:15	7. Air Concentration Calculations
14:15 – 14:30	10:15 – 10:30	Break
14:30 – 15:30	10:30 – 11:30	8. Configuring the CAPTEX simulation
15:30 – 16:30	11:30 – 12:30	Break
16:30 – 17:00	12:30 – 13:00	8. Configuring the CAPTEX simulation (continued)
17:00 – 18:30	13:00 – 14:30	9. Air Concentration Parameter Sensitivity
18:30 – 18:45	14:30 – 14:45	Break
18:45 – 19:30	14:45 – 15:30	10. Alternate Display Options
19:30 – 20:20	15:30 – 16:20	11. Pollutant Transformations and deposition <i>(start this section if time permits)</i>
20:20 – 20:30	16:20 – 16:30	Second day wrap-up / questions

Note: all times are approximate

Agenda – Day 3

UTC	EDT	Agenda Item
12:30 – 12:45	08:30 – 08:45	Comments / questions from previous day
12:45 – 14:15	08:45 – 10:15	11. Pollutant Transformations and deposition
14:15 – 14:30	10:15 – 10:30	Break
14:30 – 16:00	10:30 – 12:00	12. Air Concentration Uncertainty
16:00 – 17:00	12:00 – 13:00	Break
17:00 – 19:00	13:00 – 15:00	13. Source Attribution Methods
19:00 – 19:15	15:00 – 15:15	Break
19:15 – 20:20	15:15 – 16:20	14. Wildfire Smoke and Dust Storms
20:20 – 20:30	16:20 – 16:30	Third day wrap-up / questions

Note: all times are approximate

Agenda – Day 4

UTC	EDT	Agenda Item
12:30 – 12:45	08:30 – 08:45	Comments / questions from previous day
12:45 – 14:05	08:45 – 10:05	15. Radioactive Pollutants and Dose
14:05 – 14:15	10:05 – 10:15	** Special Presentation: <i>An overview of the HySPLIT applications from NCSR Demokritos.</i> Athanasios Sfetsos, NCSR Demokritos, Greece
14:15 – 14:30	10:15 – 10:30	Break
14:30 – 16:00	10:30 – 12:00	16. Volcanic Eruptions with Gravitational Settling
16:00 – 17:00	12:00 – 13:00	Break
17:00 – 18:00	13:00 – 14:00	17. Custom Simulations (Chris Loughner, NOAA ARL, will present section 17.5)
18:00 – 19:00	14:00 – 15:00	** Special Presentation: <i>STILT Demonstration</i> Derek Mallia, University of Utah, United States
19:00 – 19:15	15:00 – 15:15	Break
19:15 – 20:30	15:15 – 16:30	Final wrap-up / questions

Note: all times are approximate

What height should you start a back-trajectory from, if you are trying to see where air masses impacting a given measurement came from?

What height should you start a back-trajectory at?

CASE 1:

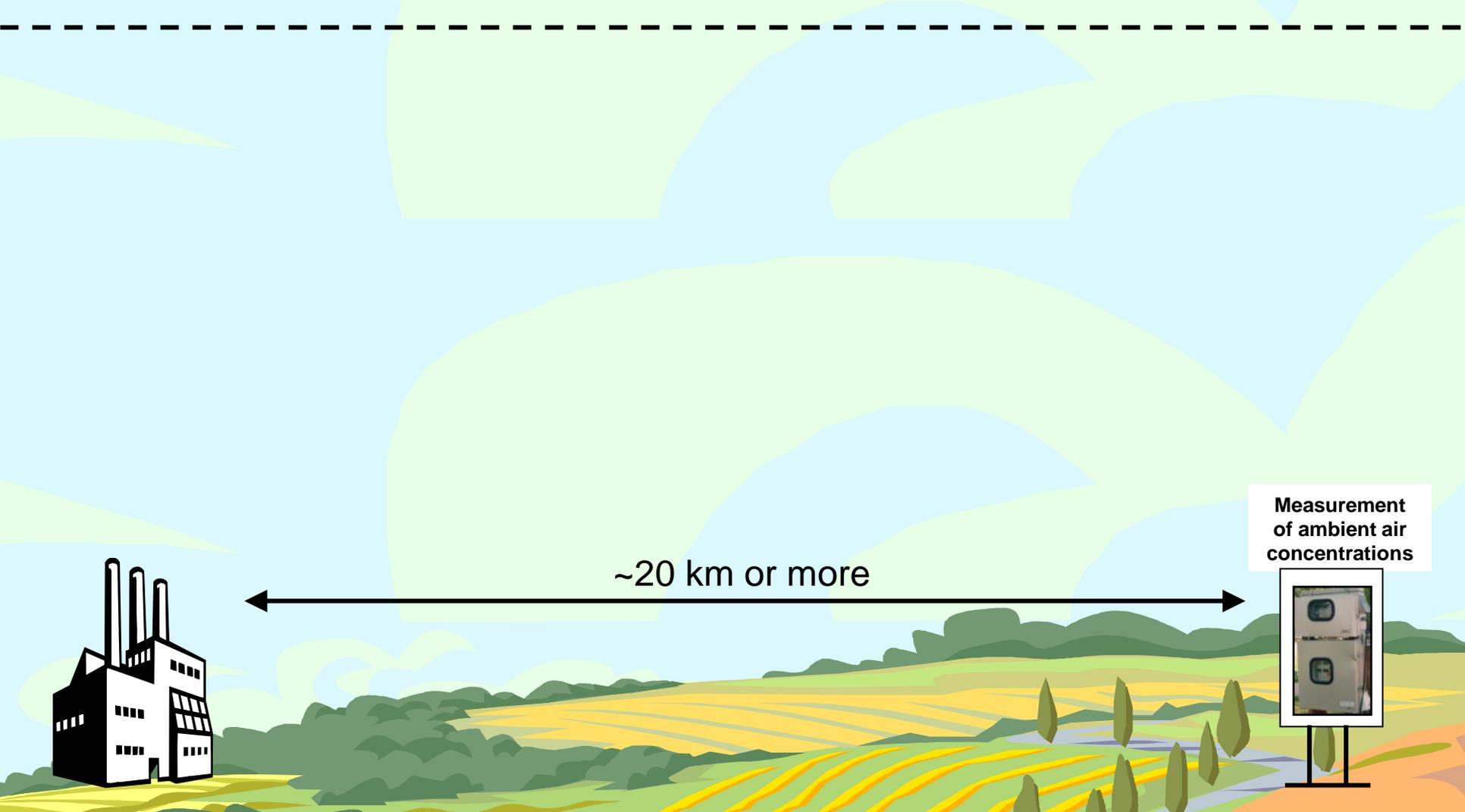
- relatively simple terrain
- at least ~20 km or more away from any major sources

CASE 2:

- at the top of a relatively isolated mountain

CASE 1:

- relatively simple terrain
- at least ~20 km or more away from any major sources



Greater than ~20km from the source,
if the forward trajectory from the source is within the PBL,
then the source can impact the measurement site,
even if the trajectory endpoint near the site is not at the height of the sampler...
This is because the PBL is relatively well-mixed during the day.

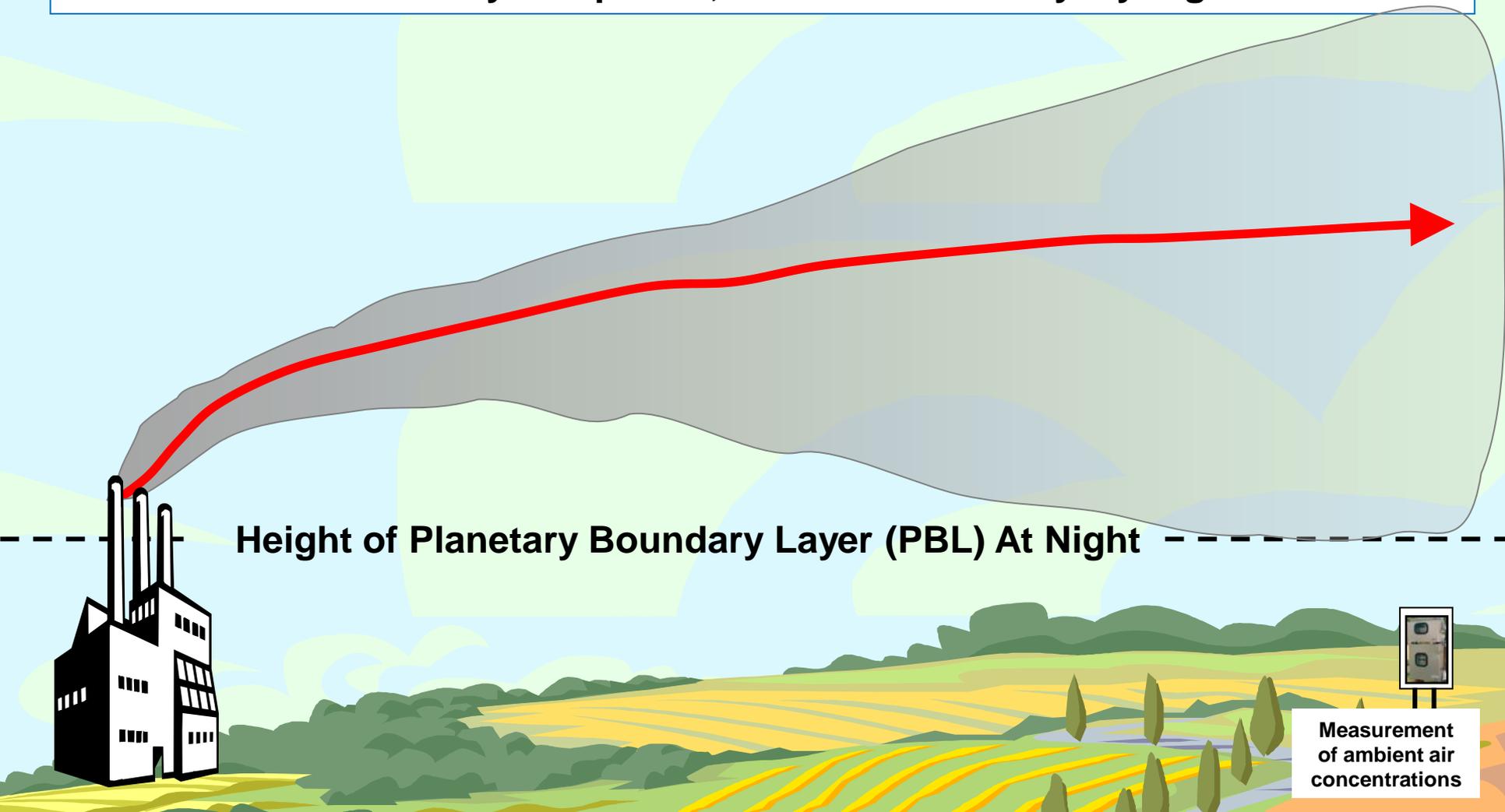
----- Height of Planetary Boundary Layer (PBL) During the Day -----

- ❑ a forward trajectory is the “center line” of a plume
- ❑ horizontal & vertical dispersion around this center line

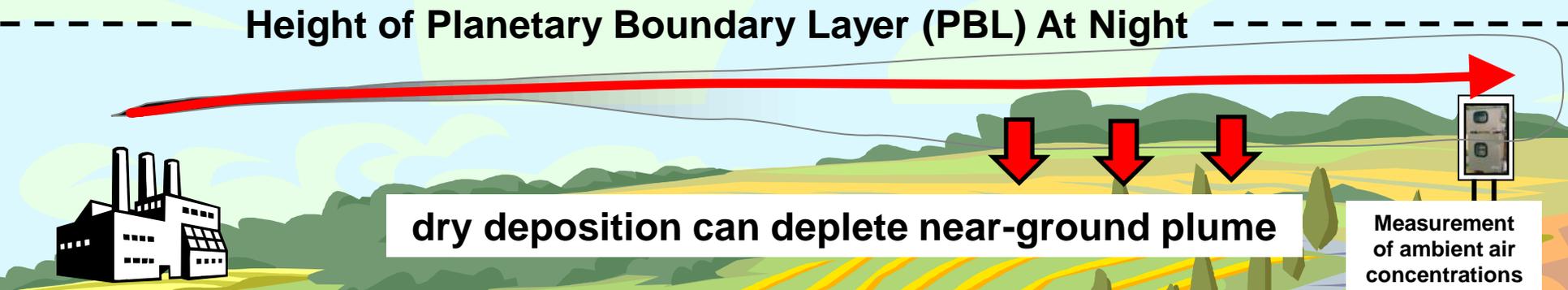


Measurement
of ambient air
concentrations

- ❑ At night, the Planetary Boundary Layer (PBL) is generally much shallower
- ❑ Emissions from an elevated stack *may* be emitted above the PBL
- ❑ In this case, there *may* be little impact on a ground-based measurement site until the next daytime period, when the boundary layer grows.



- ❑ At night, the Planetary Boundary Layer (PBL) is generally much shallower
- ❑ Emissions from a relatively low stack may be emitted within the PBL
- ❑ Note, if the pollutant dry deposits relatively rapidly, by the time the plume reaches the receptor, there may be little pollutant left... **Back-trajectories do not include deposition!**



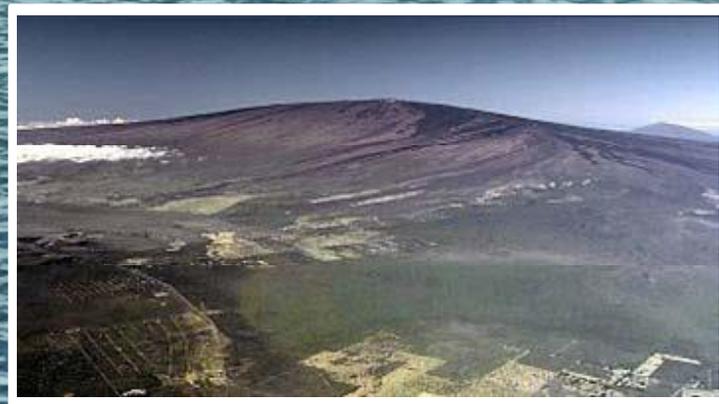
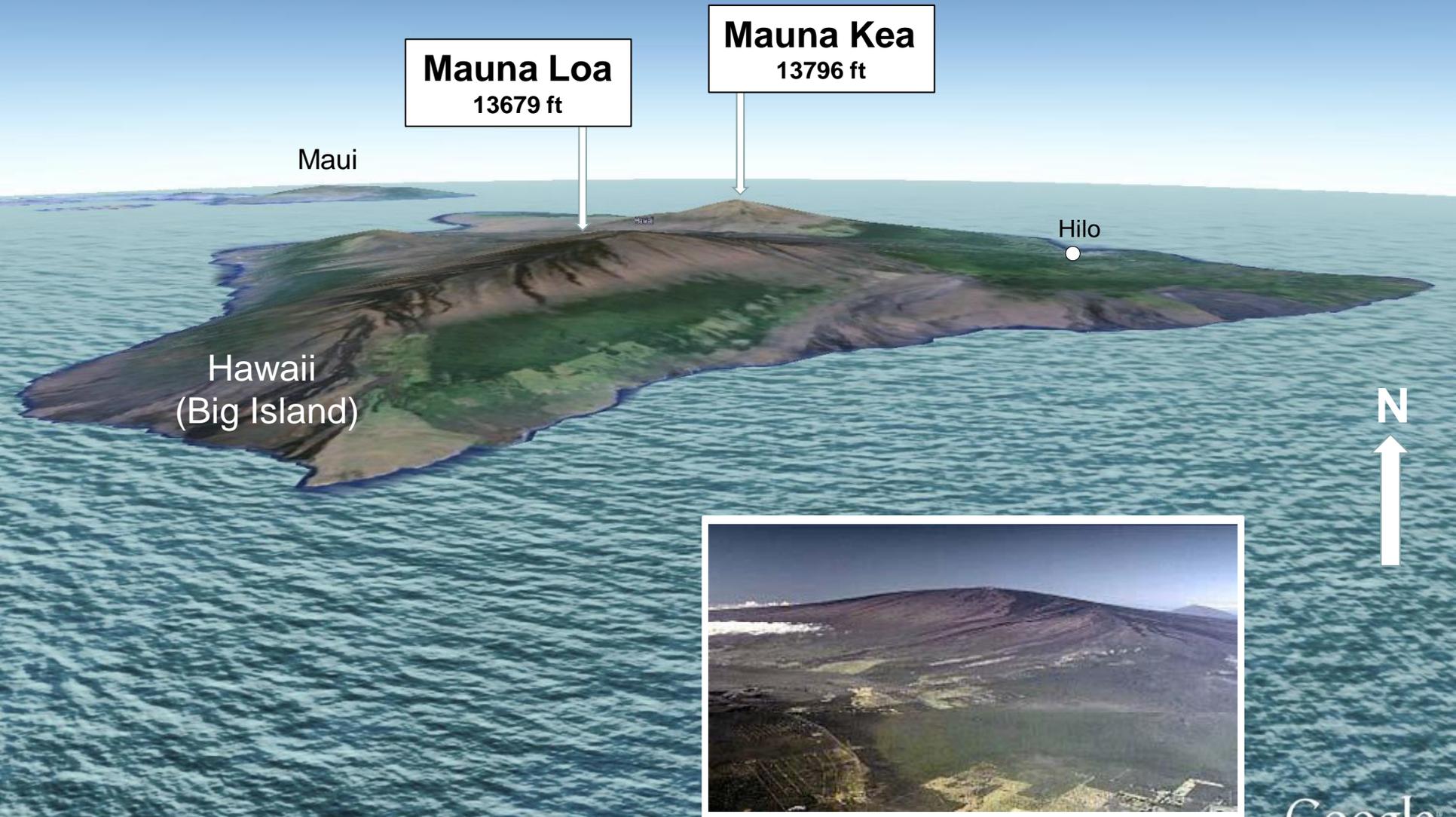
- ❑ What are the implications of these ideas for back-trajectories?
- ❑ What HEIGHT should one start a back-trajectory?
- ❑ If you start very low to the ground, e.g., at the sampler height, the trajectories often hit the ground... This may not give a representative back-trajectory
- ❑ “best” starting height for back-trajectories may be from the middle of the Planetary Boundary Layer
- ❑ It can be useful to start trajectories at different heights to see what influence the starting height has on the results

--- PBL Height ---

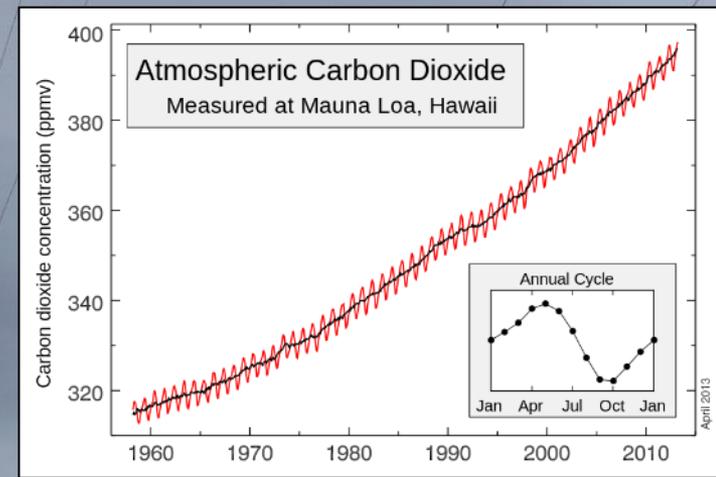
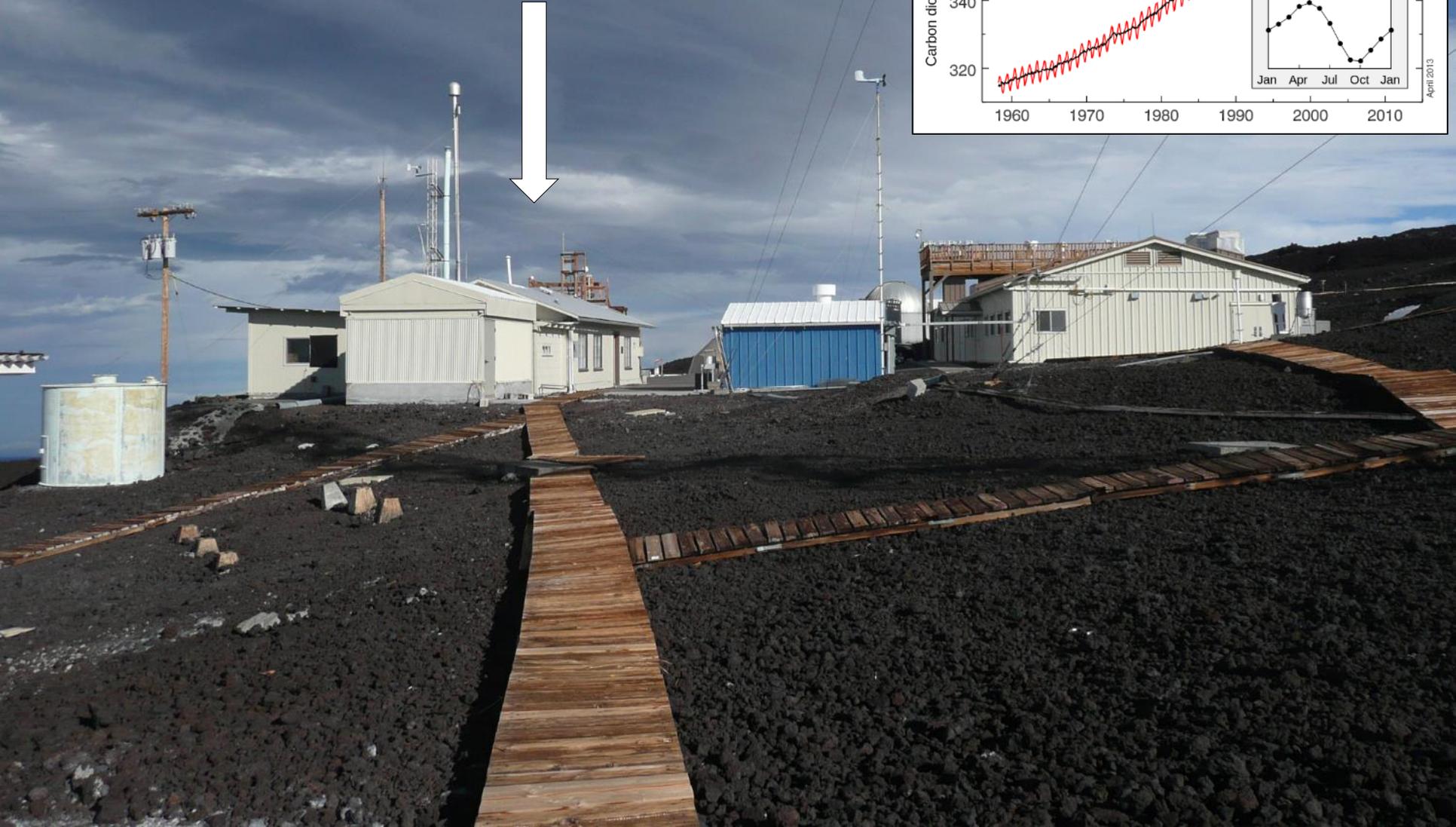
$$H = 0.5 * PBL$$



CASE 2: at or near the top of a relatively isolated mountain



Mercury measurement instruments on roof and inside historic Keeling Building, near the summit of Mauna Loa

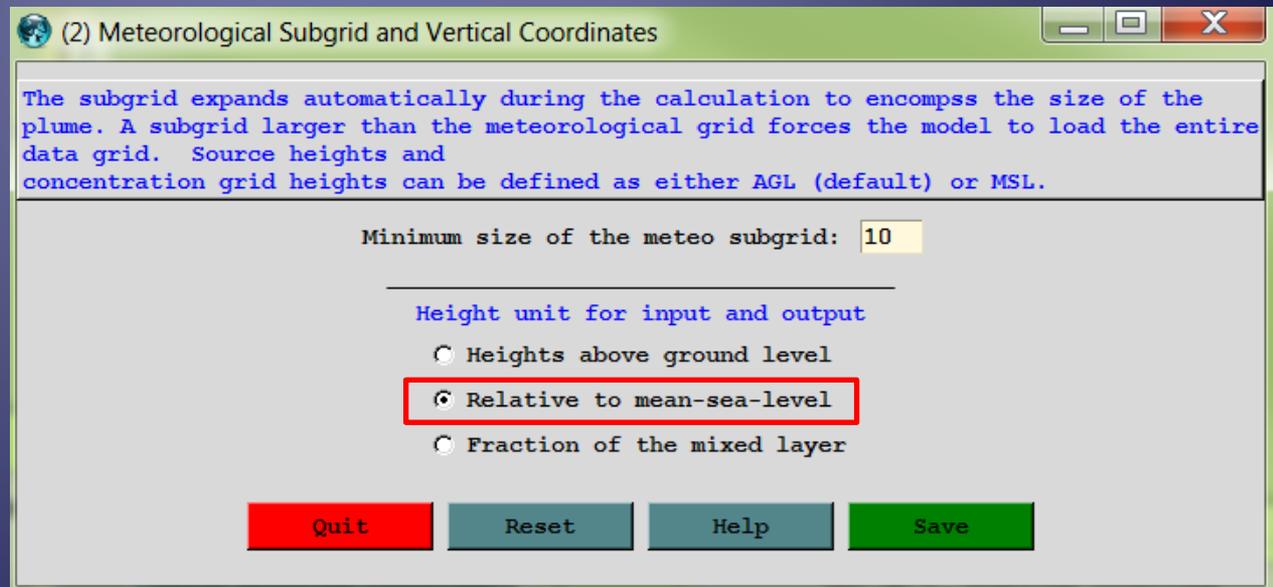


**Mercury
measurement
instruments on roof
and inside historic
Keeling Building,
near the summit
of Mauna Loa**



In this case, especially if sampling free-tropospheric air masses, would likely want to start the back-trajectory simply at the height of the summit above mean sea level.

- (1) Exact terrain height may not be that accurately characterized in the met data, so selecting a height Above Ground Level can be problematical
- (2) Use Advanced Menu to select “Relative to mean-sea-level”, and could then simply use the height of the summit



Wrap Up – Day 2

Day 2 – Wrap Up

- ❑ **We hope our colleagues, and everyone else affected by the very large earthquake in Mexico earlier today, are safe and sound.**
- ❑ Recordings are taking longer than we expected to process – *they likely may not be available until 18-24 hours after a given session ends.*
- ❑ Information on viewing the videos is on the Workshop Web Page, and in the Handout today ***Workshop_Intro_Day_02.pdf*** (and downloadable from Workshop Web Page as “Handout for Day 2”)
- ❑ **We have posted the meteorological data files that Roland mentioned at the start of today’s Workshop.** Roland may be doing a special simulation of the ongoing dust-storm of the Atlantic Ocean, and if you want to try to run it along with him, you will need to download these met files.
- ❑ Workshop guidance and resources posted at **[Workshop Web Page](#)**

https://www.ready.noaa.gov/register/HYSPLIT_hyagenda.php

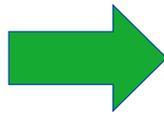
Day 2 – Wrap Up

Recordings. Videos of each day's on-line sessions are being created for review by participants, e.g. Processing of the videos to make them viewable takes significant time. There are two places that you be identical:

1. **HYSPLIT Workshop Channel.** This version of each day's video will likely be ready first -- pe and will be available, once it is ready, on the [HYSPLIT Workshop channel](#)  hosted by Go-to simple Go-to-Webinar registration page where you enter your name and email address, and
2. **The NOAA Air Resources Laboratory website.** This version of the video may take longer to corresponding entry below will become a link. When you click on one of these links, you should

- ▶ [Instructor's presentation slides for days 1 to 4.](#)
- ▶ [Workshop video recording day 1 \(June 22, 2020\)](#), [Handout for day 1.](#)
- ▶ Place holder for Day 2 video recording [Handout for day 2.](#)
- ▶ Place holder for Day 3 video recording. Meteorological data files for dust storm simulation
 - ▶ [1-degree GDAS data spanning from 6/15 to 6/21/2020](#) (572 MB)
 - ▶ [1-degree GFS forecast for the period from 6/22 to 7/1/2020](#) (776 MB) - This file
- ▶ Place holder for Day 4 video recording.

Just click on each link to download each of these met files. Don't right click and save as.



Day 2 – Wrap Up

- ❑ Please ask general questions about the Webinar or Go-to-Webinar in the Control Panel, **but ask HYSPLIT, GUI, and Tutorial-related questions in the HYSPLIT Forum**
 - We have responded to a lot of questions posed in the Go-to-Webinar Q/A by asking you to post your question in the HYSPLIT Forum
 - **A lot more of you are posting your technical questions there, and we greatly appreciate this!**
 - Instructions on how you post a question in the Forum is provided in the Handout ***Workshop_Intro_Day_02.pdf*** (and downloadable from *Workshop Web Page as “Handout for Day 2”*)
 - Also, if you get an answer, you can post a quick response in the topic thread to say if it worked! (or not...)

Asking Questions

<https://hysplitbbs.arl.noaa.gov/viewforum.php?f=36>

You can post your question in the appropriate section, based on where in the Tutorial your question refers to.

phpBB[®] HYSPLIT Forum: hysplitbbs.arl.noaa.gov
A Forum for HYSPLIT Dispersion Model Users to Communicate Questions, Problems, and Ideas for Upgrades, etc.

Search...

Quick links [FAQ](#) [MCP](#) Notifications **11** [MarkCohen](#) ▼

[Board index](#) < [HYSPLIT Workshop](#) < [2020 HYSPLIT Workshop Questions](#)

2020 HYSPLIT Workshop Questions Mark subforums read

FORUM	TOPICS	POSTS	LAST POST
Rehearsal <small>This forum will be used by the ARL staff during rehearsals. All posts under this forum will be deleted after the rehearsals.</small>	1	2	Re: Moderator test by alicec June 12th, 2020, 11:30 am
1. Installing HYSPLIT <small>Post questions about HYSPLIT installation.</small>	4	8	? Re: Failure in unzipping the ... by sonny.zinn June 9th, 2020, 1:45 pm
2. Testing the installation	1	1	? TOPIC_UNAPPROVED_FORUM
3. Gridded meteorological data files	0	0	No posts
4. Trajectory calculations	0	0	No posts
5. Trajectory options	0	0	No posts
6. Trajectory statistics	0	0	No posts
7. Air concentration calculations	0	0	No posts
8. Configuring the CAPTEX simulation	0	0	No posts
9. Air concentration parameter sensitivity	0	0	No posts
10. Alternate display options	0	0	No posts
11. Pollutant transformations and deposition	0	0	No posts
12. Air concentration uncertainty	0	0	No posts
13. Source attribution methods	0	0	No posts
14. Wildfire smoke and dust storms	0	0	No posts
15. Radioactive pollutants and dose	0	0	No posts
16. Volcanic eruptions with gravitational settling	0	0	No posts
17. Custom simulations	0	0	No posts

Asking Questions

<https://hysplitbbs.arl.noaa.gov/viewforum.php?f=46>



The screenshot shows a web browser displaying the HYSPPLIT Forum page. The browser address bar shows the URL `hysplitbbs.arl.noaa.gov/viewforum.php?f=46`. The forum header includes the phpBB logo and the text "HYSPPLIT Forum: hysplitbbs.arl.noaa.gov". Below the header, there are navigation links for "Quick links", "FAQ", and "MCP", along with a notification bell icon for "MarkCohen" with 7 notifications. The breadcrumb trail reads: "Board index < HYSPPLIT Workshop < 2020 HYSPPLIT Workshop Questions < 9. Air concentration parameter sensitivity".

The forum title "9. Air concentration parameter sensitivity" is highlighted with a red box. Below the title, there is a "New Topic" button and a search bar. The forum content is displayed in a table with columns for "TOPICS", "REPLIES", "VIEWS", and "LAST POST". The first row of the table is highlighted with a red box:

TOPICS	REPLIES	VIEWS	LAST POST
 How to Retrieve Captex Control & Setup Files? by RickV » June 23rd, 2020, 1:39 pm	3	29	by Tianfeng.Chai June 23rd, 2020, 2:09 pm

At the bottom right of the forum content, there is a "Mark topics read" link, "1 topic", and "Page 1 of 1".

Asking Questions

hysplitbbs.arl.noaa.gov/viewtopic.php?f=46&t=1898

phpBB HYSPLIT Forum: hysplitbbs.arl.noaa.gov
 A Forum for HYSPLIT Dispersion Model Users to Communicate Questions, Problems, and Ideas for Upgrades, etc.

Quick links: FAQ MCP Notifications 8 MarkCohen

Board index < HYSPLIT Workshop < 2020 HYSPLIT Workshop Questions < 9. Air concentration parameter sensitivity

How to Retrieve Captex Control & Setup Files?

Post Reply Search this topic... 4 unread posts • 4 posts • Page 1 of 1

Re: How to Retrieve Captex Control & Setup Files?
 by Tianfeng.Chai » June 23rd, 2020, 2:09 pm
 Did you retrieve "Setup file" as well?
 It should be retrieved from "Advanced"/"Configuration Setup"/"Concentration" menu.

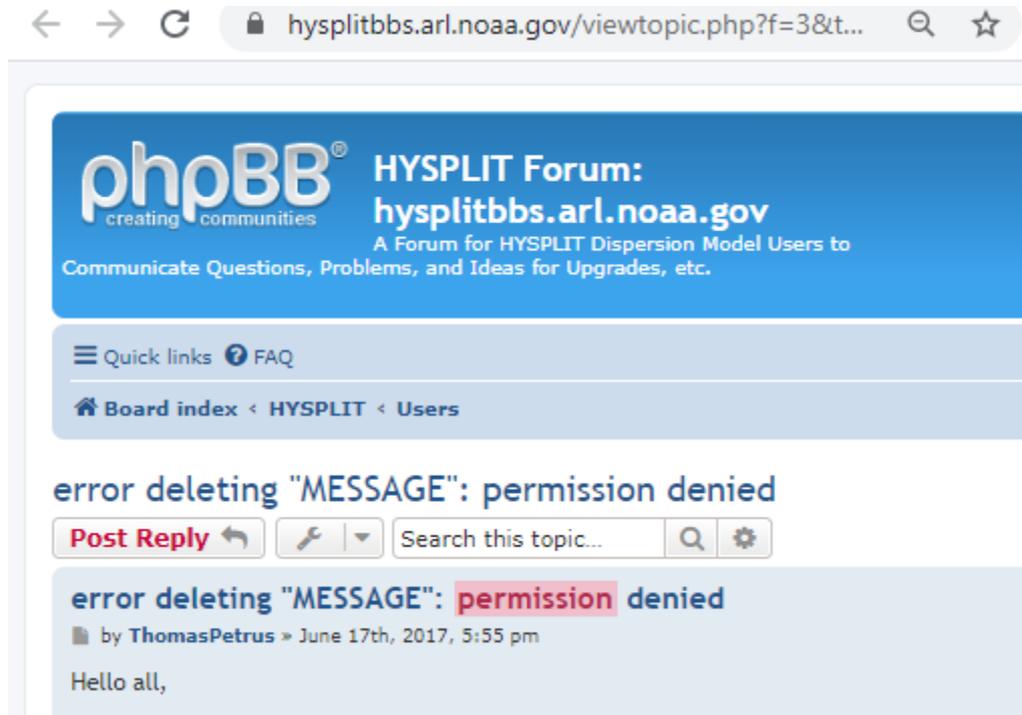
Re: How to Retrieve Captex Control & Setup Files?
 by RickV » June 23rd, 2020, 2:08 pm
 Your references are correct. I completed Section 8 correctly and saved both captex files (i.e., these reside in the working directory). However, my efforts to execute these instructions have caused the Wish Application to stop working twice. When this occurs HYSPLIT shuts down. With this in mind I have been unable to proceed beyond attempting to load the control file. Can you advise me to circumvent this problem?

Re: How to Retrieve Captex Control & Setup Files?
 by Tianfeng.Chai » June 23rd, 2020, 2:01 pm
 I believe you are referring to the following instruction in Section 9.1.
 "First press the center Reset button on the main GUI to clear all previous changes and then retrieve captex_control.txt into the Setup Run menu and captex_setup.txt into the Concentration Configuration menu"
 You should have "captex_control.txt" and "captex_setup.txt" saved when you followed Section 8. Otherwise you can use "captex2_control.txt" and "captex2_setup.txt" in the downloaded and unzipped Tutorial/captex directory.
 To retrieve Control file, go to "Concentration" / "Setup Run" menu, press "Retrieve" to enter the Path/Name of the control file (or use "Browse" function there).
 To retrieve Setup file, go to "Advanced"/"Configuration Setup"/"Concentration", you can find "Retrieve" button at the bottom as well.

How to Retrieve Captex Control & Setup Files?
 by RickV » June 23rd, 2020, 1:39 pm
 The instructions for these processes seem vague in the tutorial.html file. Can you elaborate?
 Edit - This may be straightforward. I pressed "Retrieve" and "Retrieve Previously Saved Simulation" dialog opens prompting user for CONTROL file first. Perhaps "Setup" file prompt comes second.
 Regardless, my attempt to retrieve control file resulted in the Fatal Error: alloc: could not allocate 800 new objects. Why? I did press "reset" in the main GUI beforehand.



Asking Questions



The screenshot shows a web browser window with the address bar containing the URL: `hysplitbbs.arl.noaa.gov/viewtopic.php?f=3&t...`. The page header features the phpBB logo with the tagline "creating communities" and the forum title "HYSPPLIT Forum: hysplitbbs.arl.noaa.gov". Below the header, there are navigation links for "Quick links" and "FAQ", and a breadcrumb trail: "Board index < HYSPPLIT < Users". The main content area displays an error message: "error deleting 'MESSAGE': permission denied". Below the error message, there is a "Post Reply" button, a search box with the text "Search this topic...", and a settings icon. The error message is repeated in a larger font: "error deleting 'MESSAGE': permission denied", with the word "permission" highlighted in red. Below this, it says "by ThomasPetrus" and "June 17th, 2017, 5:55 pm". The post content begins with "Hello all,".

<https://hysplitbbs.arl.noaa.gov/viewtopic.php?f=3&t=1261&p=3529&hilit=permission+to+delete#p3529>

Agenda – Day 2 (today)

UTC	EDT	Agenda Item
12:30 – 12:45	08:30 – 08:45	Comments / questions from previous day
12:45 – 14:15	08:45 – 10:15	7. Air Concentration Calculations
14:15 – 14:30	10:15 – 10:30	Break
14:30 – 15:30	10:30 – 11:30	8. Configuring the CAPTEX simulation
15:30 – 16:30	11:30 – 12:30	Break
16:30 – 17:00	12:30 – 13:00	8. Configuring the CAPTEX simulation (continued)
17:00 – 18:30	13:00 – 14:30	9. Air Concentration Parameter Sensitivity
18:30 – 18:45	14:30 – 14:45	Break
18:45 – 19:30	14:45 – 15:30	10. Alternate Display Options
19:30 – 20:20	15:30 – 16:20	11. Pollutant Transformations and deposition <i>(start this section if time permits)</i>
20:20 – 20:30	16:20 – 16:30	Second day wrap-up / questions

Note: all times are approximate

Agenda – Day 3 (tomorrow)

UTC	EDT	Agenda Item
12:30 – 12:45	08:30 – 08:45	Comments / questions from previous day
12:45 – 14:15	08:45 – 10:15	11. Pollutant Transformations and deposition
14:15 – 14:30	10:15 – 10:30	Break
14:30 – 16:00	10:30 – 12:00	12. Air Concentration Uncertainty
16:00 – 17:00	12:00 – 13:00	Break
17:00 – 19:00	13:00 – 15:00	13. Source Attribution Methods
19:00 – 19:15	15:00 – 15:15	Break
19:15 – 20:20	15:15 – 16:20	14. Wildfire Smoke and Dust Storms
20:20 – 20:30	16:20 – 16:30	Third day wrap-up / questions

Note: all times are approximate