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!

HYSPLIT
AIR RESOURCES LAB

Workshop guidance and resources posted at

Workshop Web Page

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 *(start this section if time permits)*
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

swarm_844_tdump.3 | swarm_844_tdump.1 | swarm_844_tdump.2 | new 2 | captex_control.txt

```
83 09 25 17
1
39.90 -84.22 10.0
68
0
10000.0
1
c:/Tutorial/captex/
captex2_wrf27uw.bin
1
PMCH
67000.0
3.0
00 00 00 00 00
1
42.0 -78.0
0.25 0.25
15.0 25.0
./
hysplit2.bin
1
100
83 09 25 18 00
83 09 28 15 00
00 03 00
1
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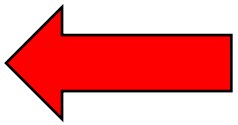


Quick Recap of Logistics

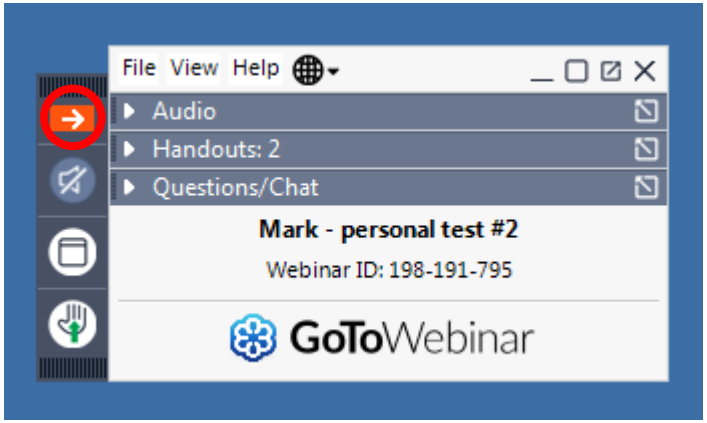
Logistics:

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



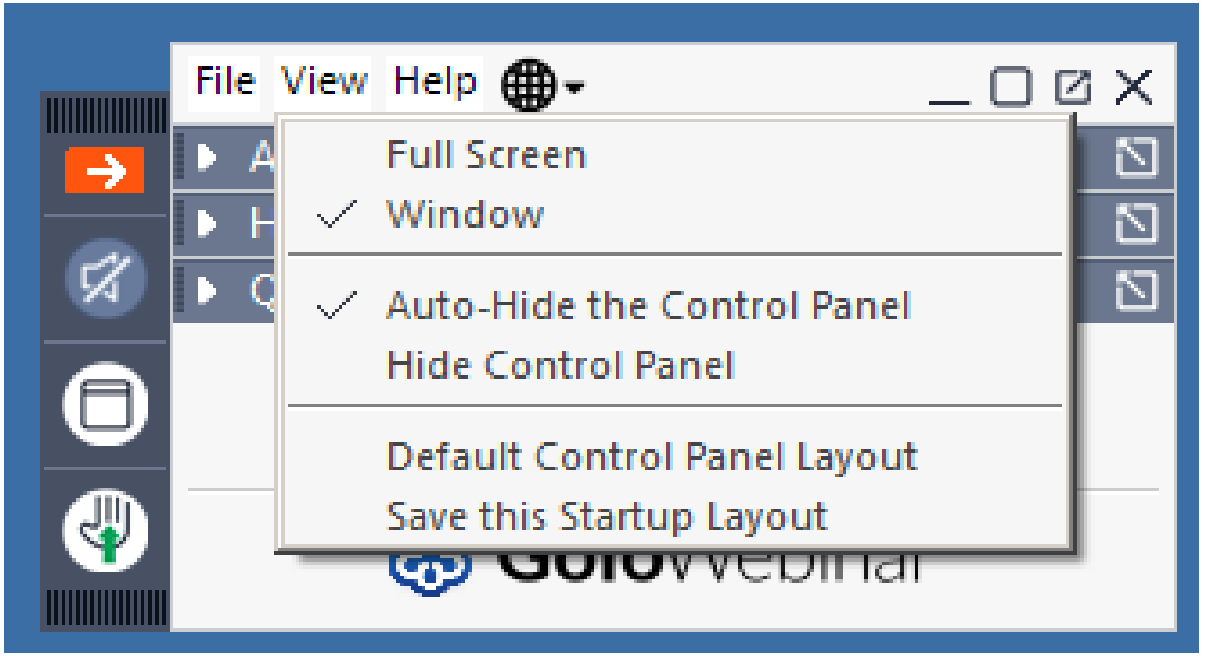
If the Go-to-Webinar Control Panel is hidden (minimized) it will look like this

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

Using the Go-to-Webinar Interface

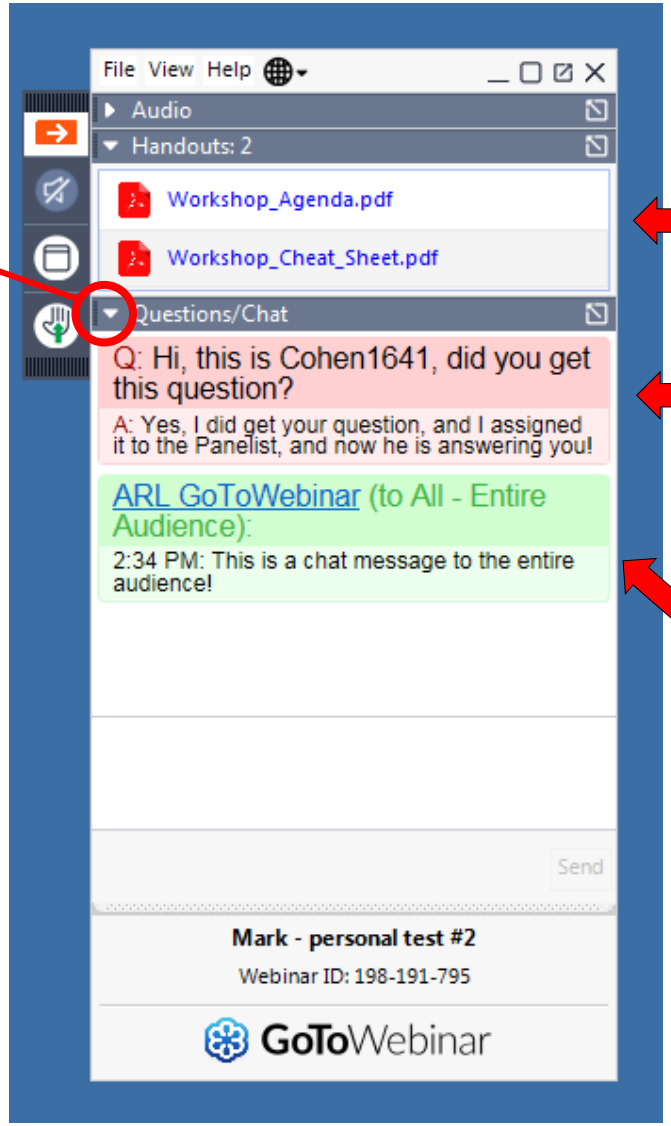
Use the View drop-down menu, for example:

- ✓ **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

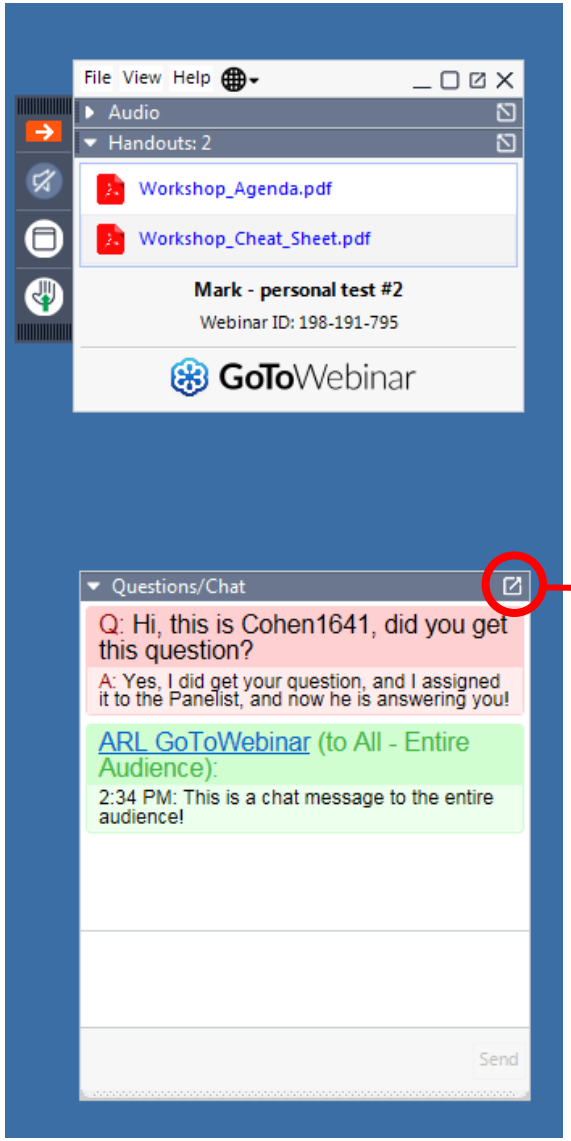


We will put important handouts in this section

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

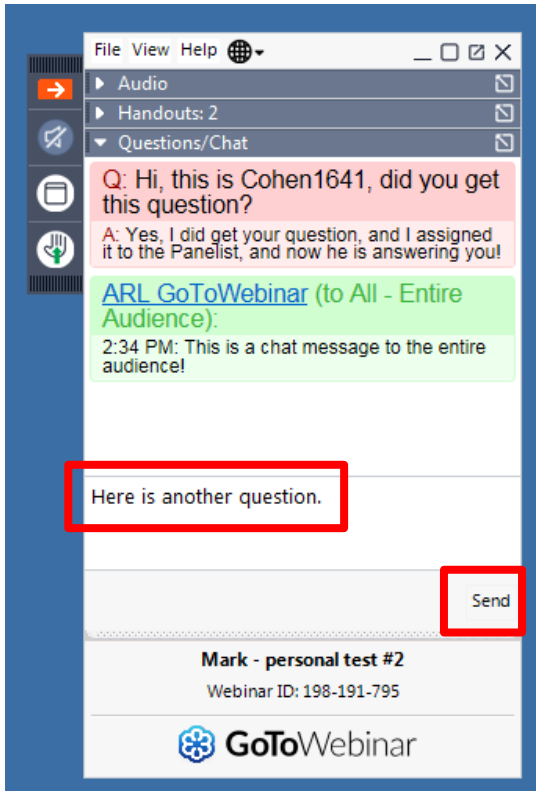
Or when the staff sends the audience a message, you will also see it here

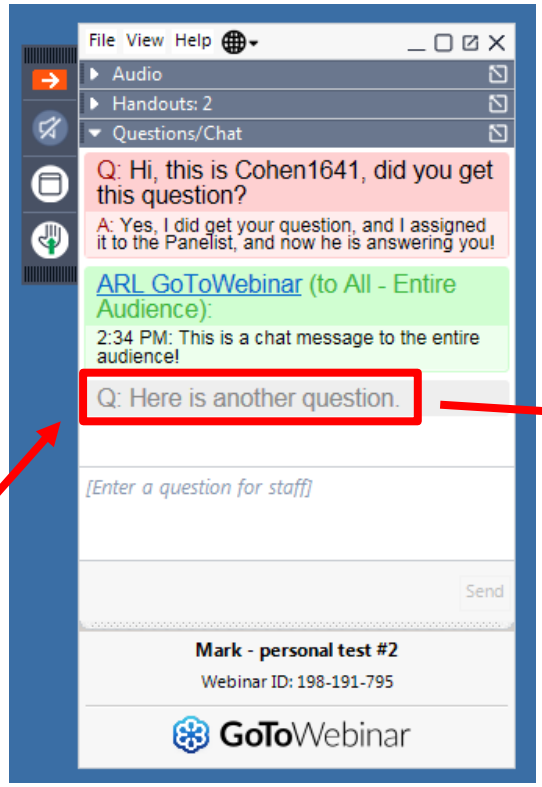
Using the Go-to-Webinar Interface

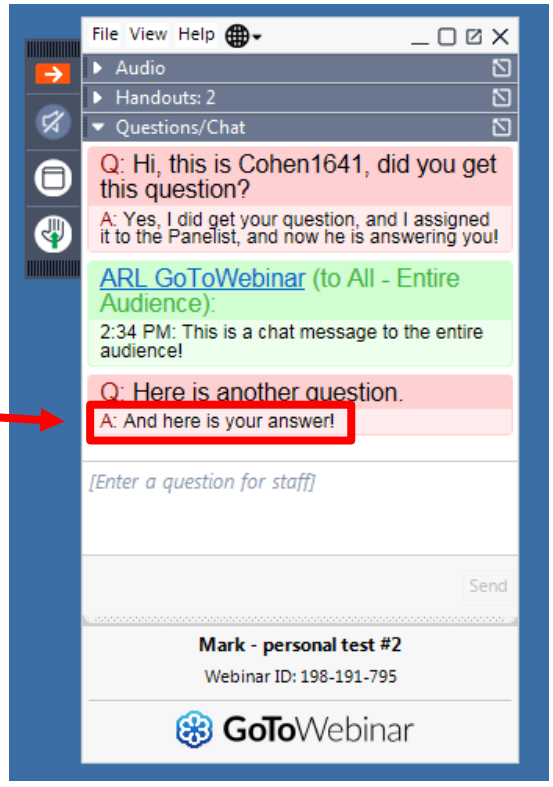


By toggling the little box in the upper right-hand corner of a given section, you can undock it or redock it

Using the Go-to-Webinar Interface







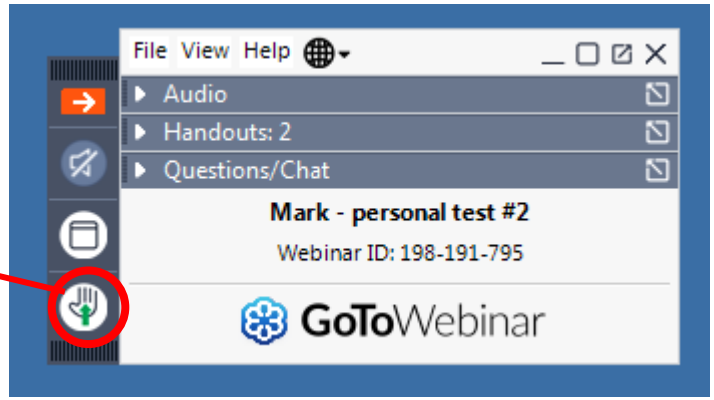
To ask a question, you type in the empty box, and then hit "send"

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

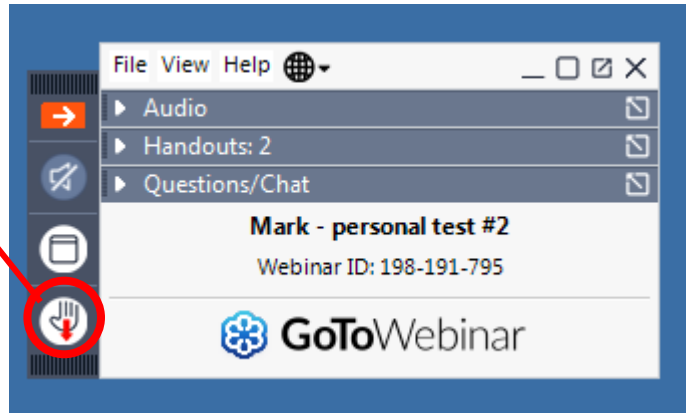
Using the Go-to-Webinar Interface

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.

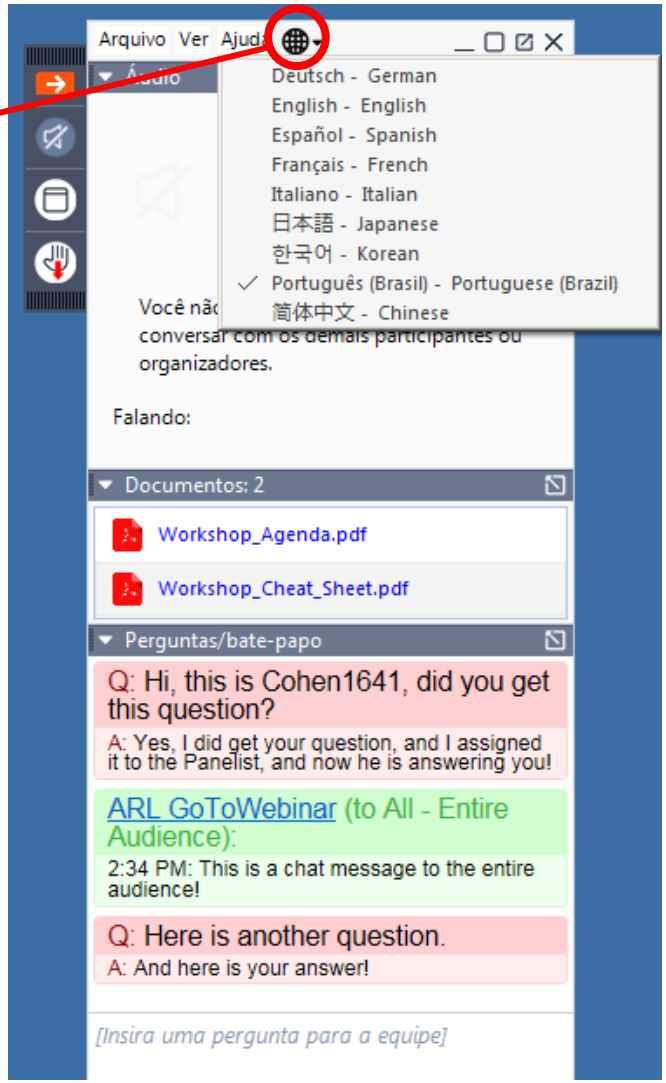
Normally, after we get the answers, we will automatically lower everyone's hand



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

Using the Go-to-Webinar Interface

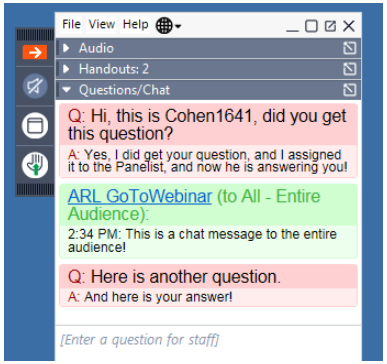
You can click on the "globe" icon to change the language of the Control Panel. Although Questions and Answers will be in English



Logistics:

Asking Questions

Asking Questions



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

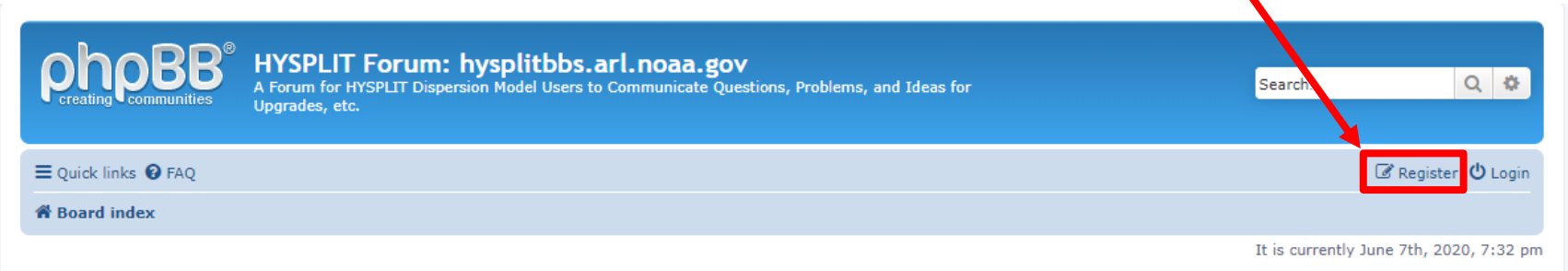
...if viewing a recording, can ask general questions by emailing **arl.gotowebinar@noaa.gov**

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

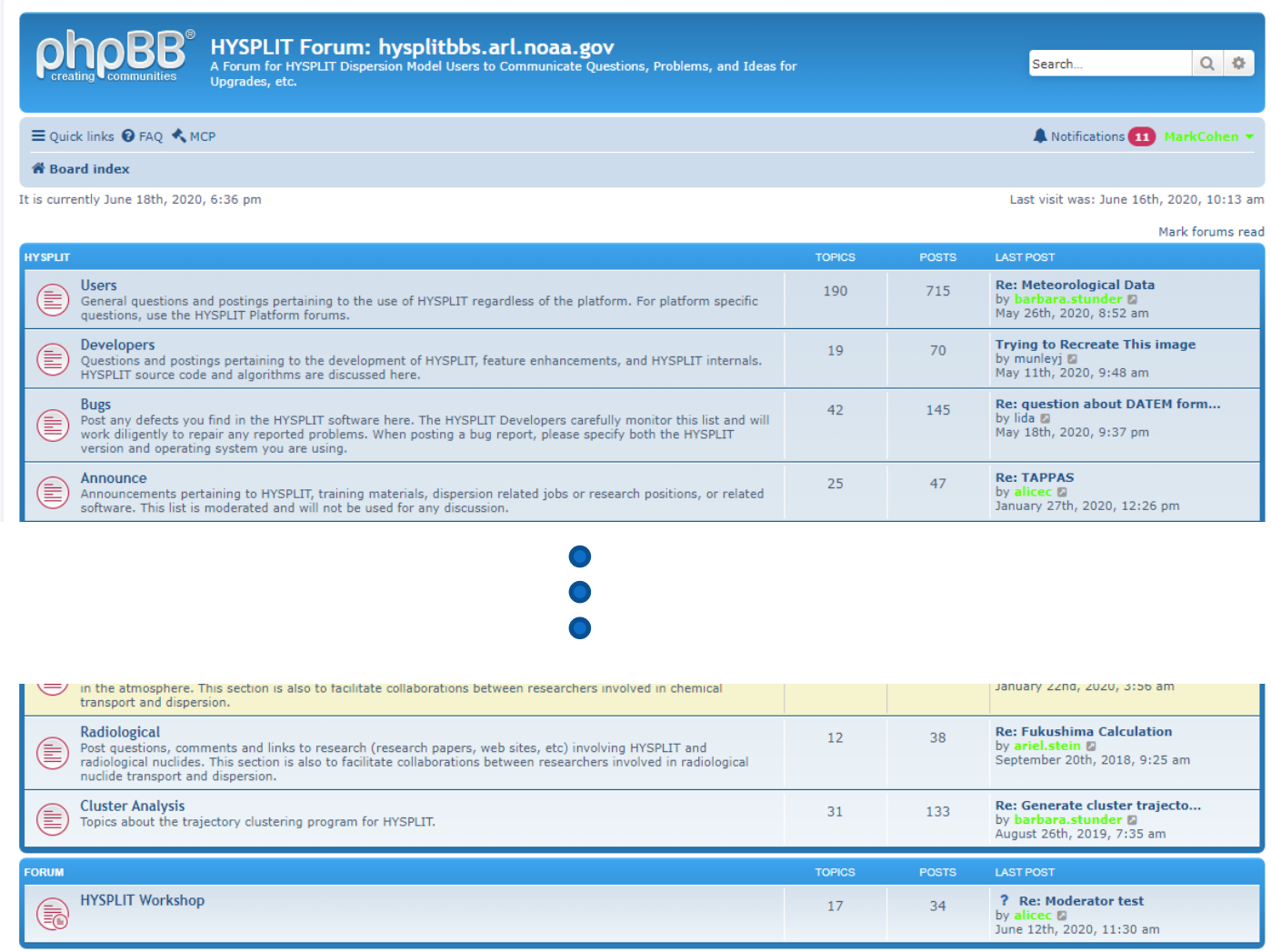
https://hysplitbbs.arl.noaa.gov/viewforum.php?f=36

Asking Questions

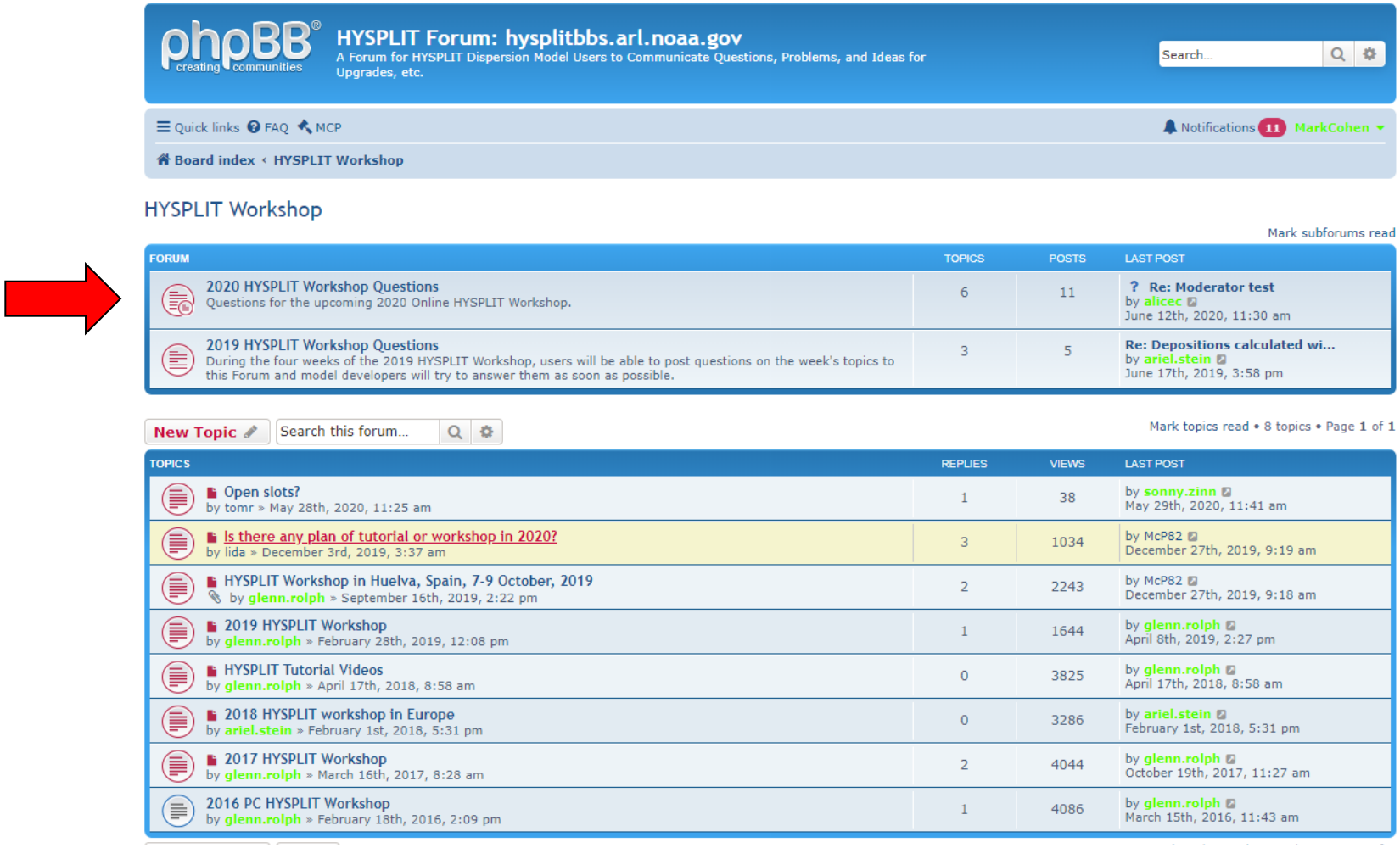
If you have not already registered for the HYSPLIT Forum, you can do so easily by clicking on the "Register" icon at https://hysplitbbs.arl.noaa.gov/



Asking Questions



Asking Questions



phpBB creating communities

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

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...

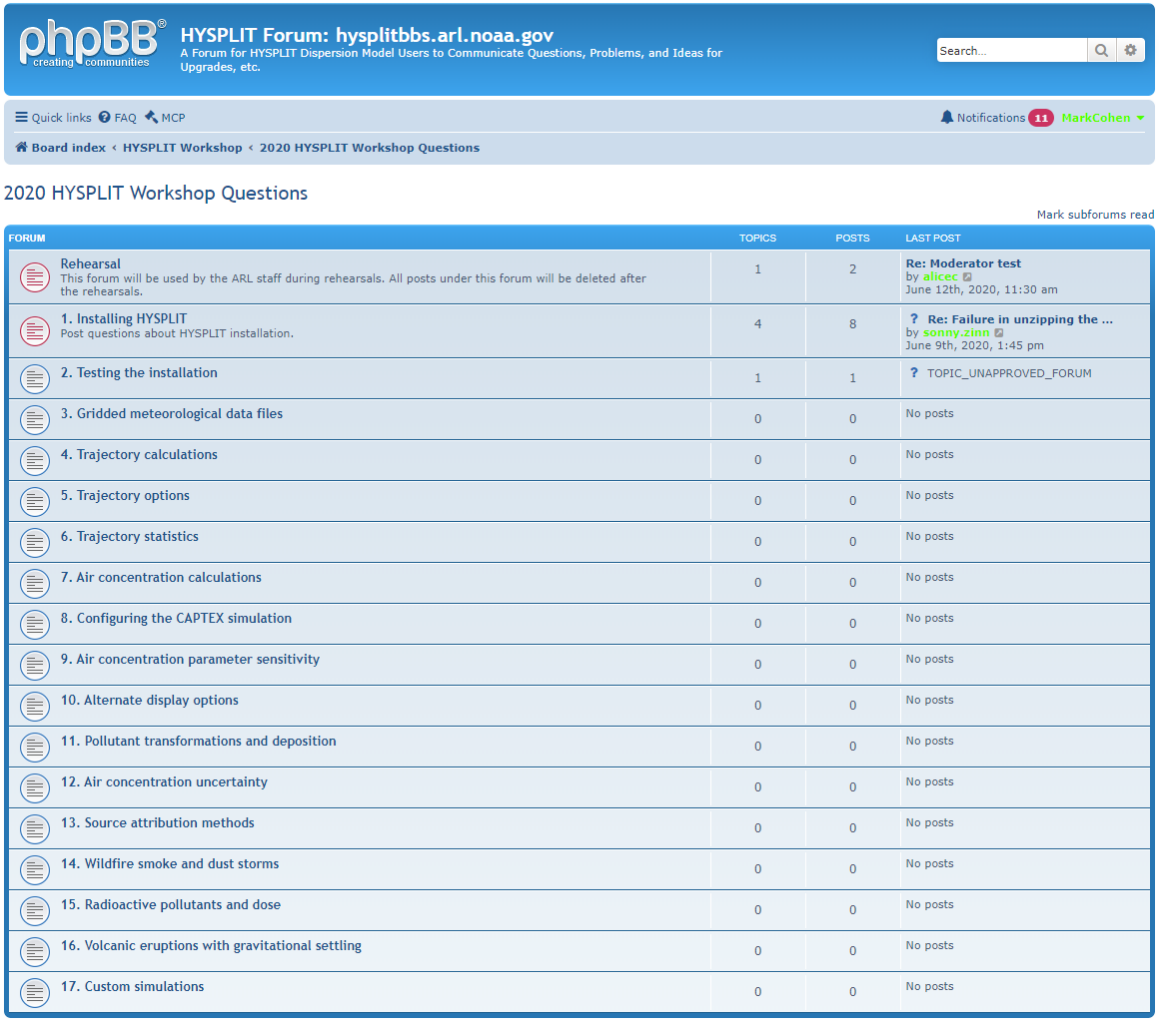
Mark topics read • 8 topics • Page 1 of 1

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
Is there any plan of tutorial or workshop in 2020? 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.



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Search...

Quick links FAQ MCP

Notifications 11 MarkCohen

Board index ‹ HYSPLIT Workshop ‹ 2020 HYSPLIT Workshop Questions

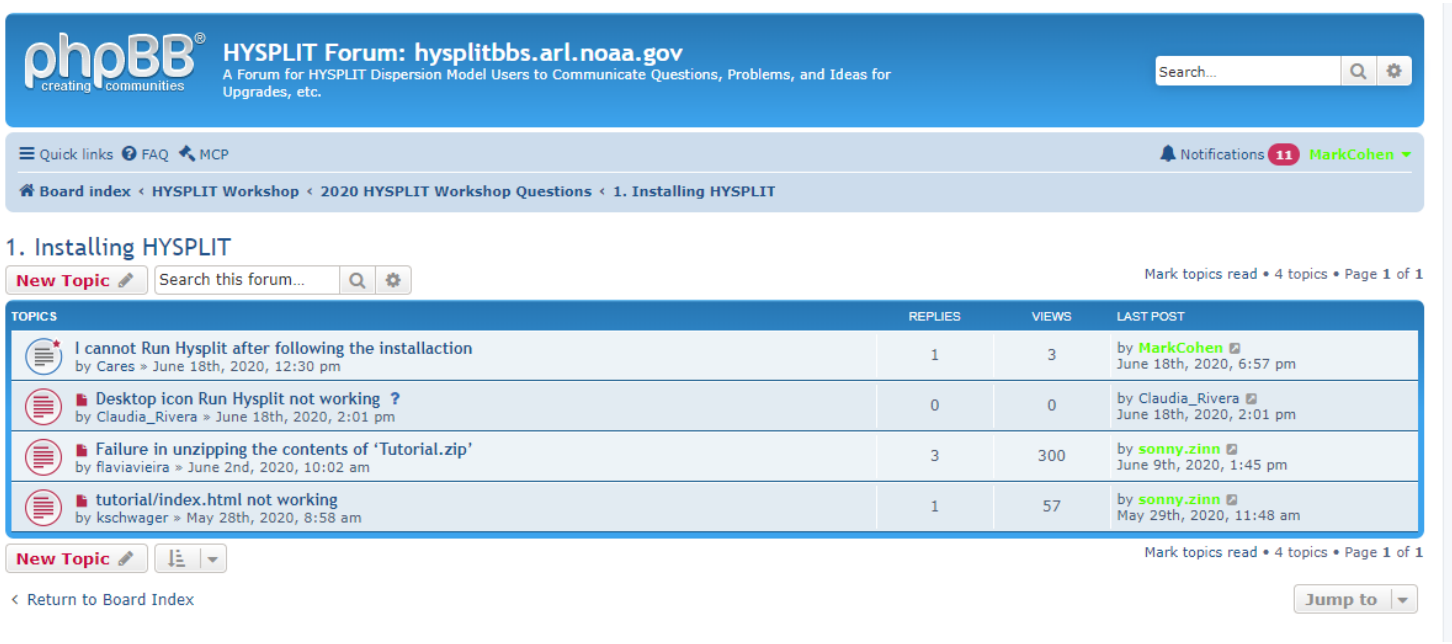
2020 HYSPLIT Workshop Questions

Mark subforums read

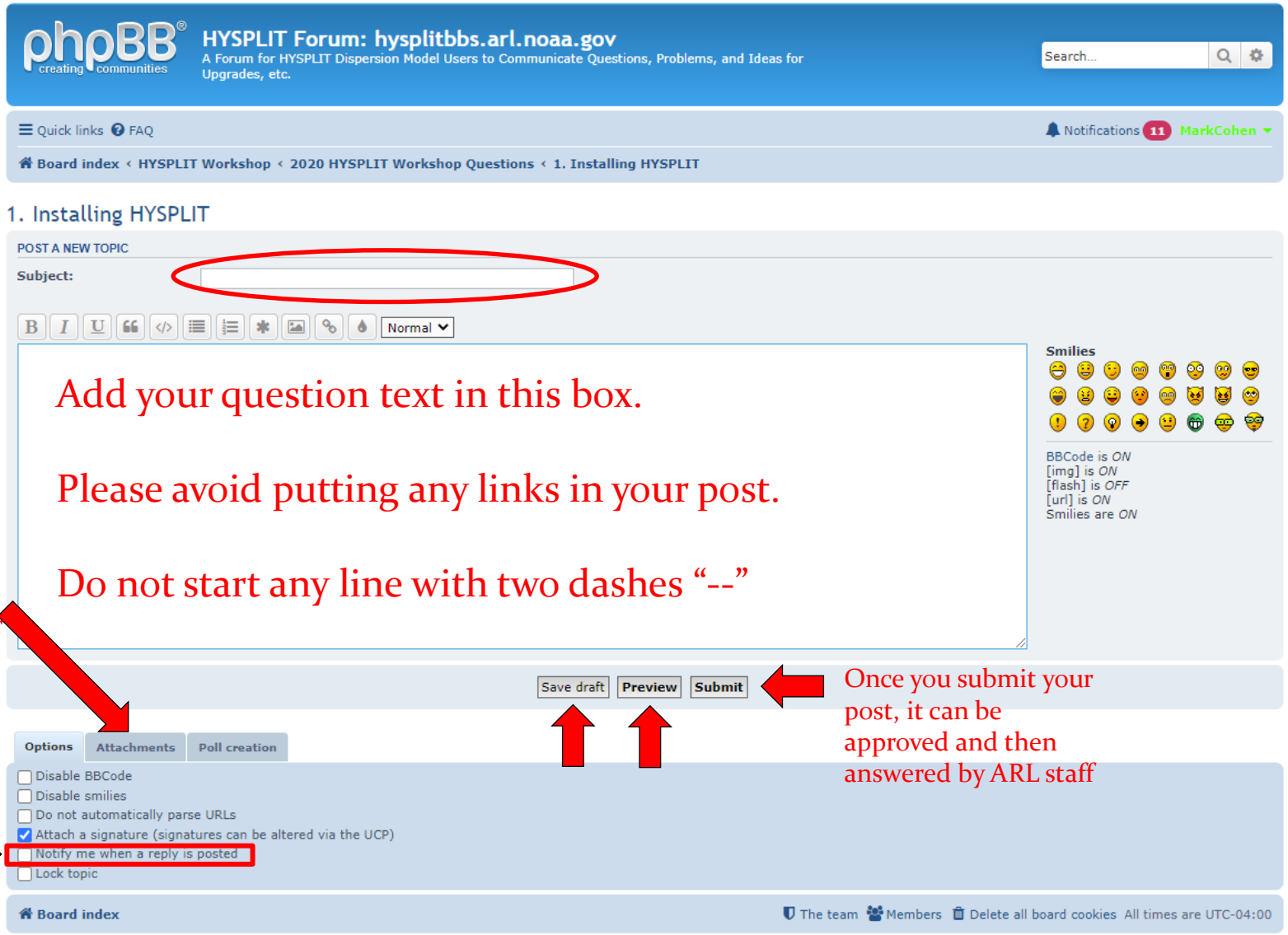
FORUM	TOPICS	POSTS	LAST POST
Rehearsal This forum will be used by the ARL staff during rehearsals. All posts under this forum will be deleted after the rehearsals.	1	2	Re: Moderator test by alicec June 12th, 2020, 11:30 am
1. Installing HYSPLIT Post questions about HYSPLIT installation.	4	8	? Re: Failure 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



Asking Questions

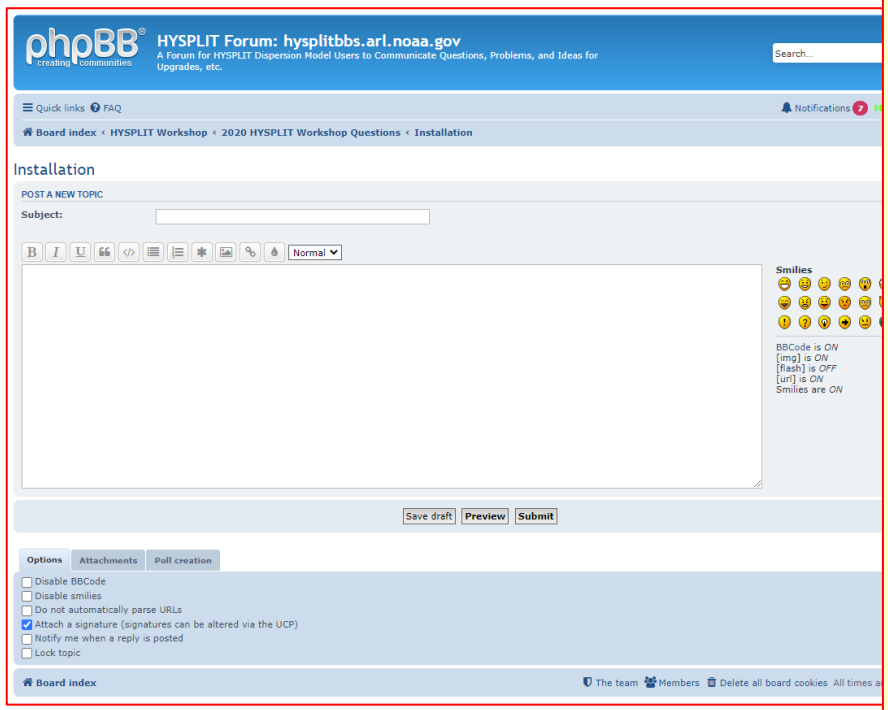


you can add attachments, e.g., one or more screen shots, and/or a CONTROL file and/or a SETUP.CFG file

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?

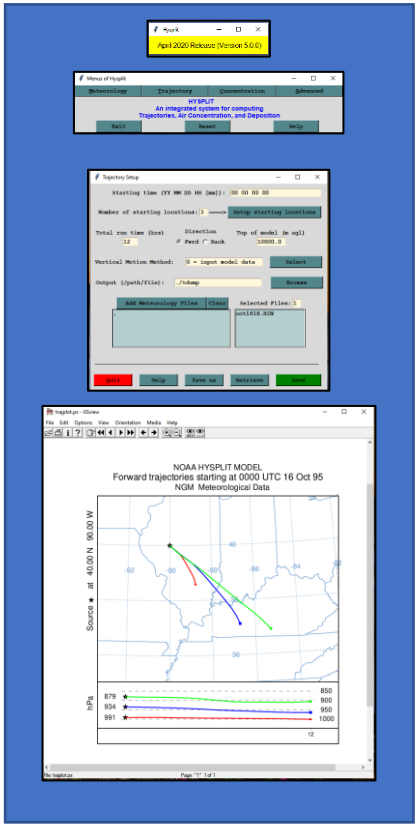


- You can ask more detailed questions, e.g., can attach screen shots and/or various input/output files
- We can provide more detailed answers
- There can be an exchange back and forth, if needed
- Can see other questions that have already been asked – in case you have a similar question
- We can give 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

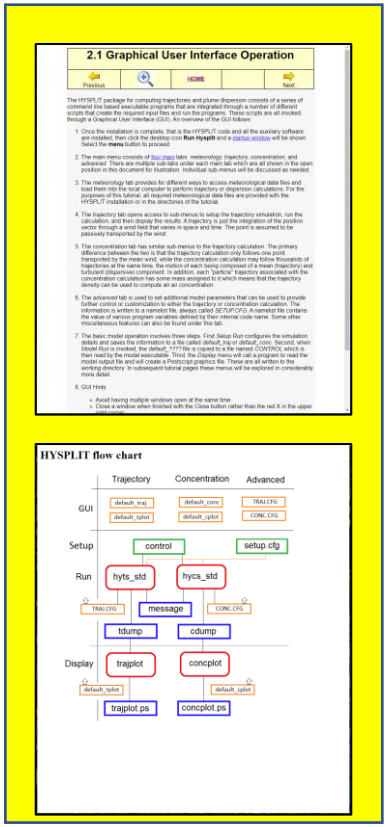
Screen Considerations

Screen Considerations

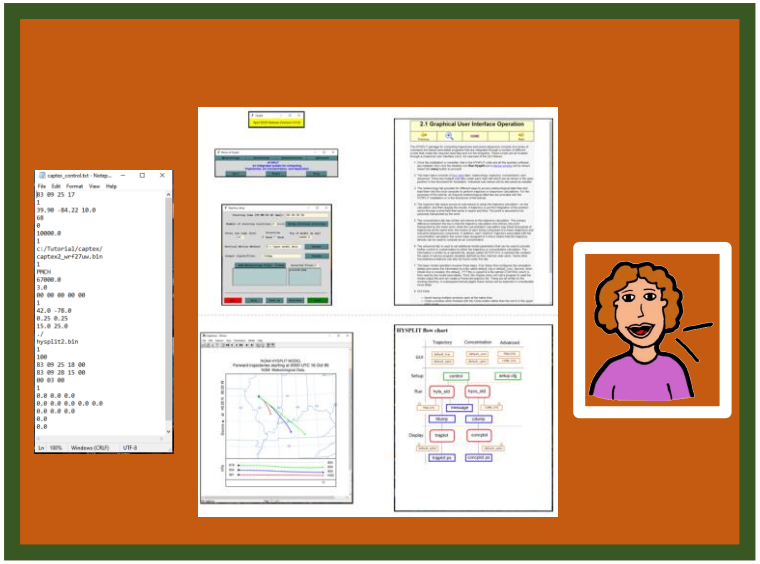
Screen area devoted to your *own* hands-on HYSPLIT modeling



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

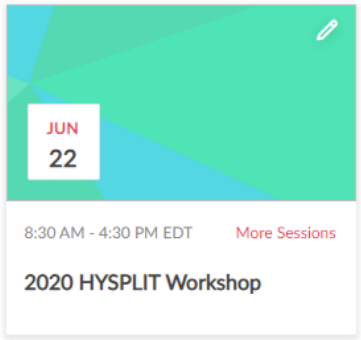
Access recordings from the Workshop Web Page:
https://www.ready.noaa.gov/register/HYSPLIT_hyagenda.php

- 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

HYSPLIT Workshop Channel

hosted by Go-to-Webinar



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

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

Virtual Posters

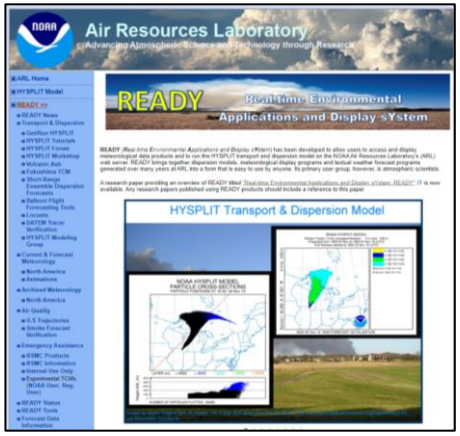
Virtual Posters

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

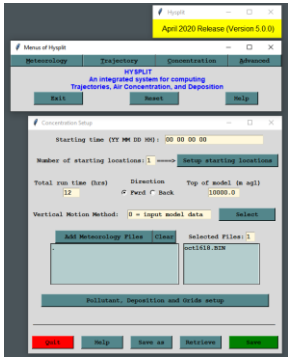
- Ryan, R., K. Kelleher, N. Murphy, and C. Burbidge, 2020: The use of HYSPLIT by the Environmental Protection Agency (Ireland) to predict the transportation of smoke and Cs-137 from wildfires near the Chernobyl Nuclear Power Plant.
- Ionov, D., 2020: Application of HYSPLIT to simulate urban pollution 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

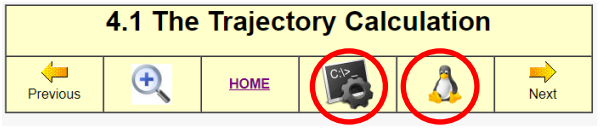
Different Ways to Use HYSPLIT



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.




```
echo "$syr $smo $sda $shr     " >CONTROL
echo "1                       ">>CONTROL
echo "$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

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

ready.noaa.gov/index.php

Air Resources Laboratory
Advancing Atmospheric Science and Technology through Research

- ARL Home
- HYSPLIT Model
- READY >>
  - READY News
  - Transport & Dispersion
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    - HYSPLIT Forum
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    - Volcanic Ash
    - Fukushima TCM
    - Short-Range Ensemble Dispersion Forecasts
    - Balloon Flight Forecasting Tools
    - Locusts
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    - North America
  - Air Quality
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  - Emergency Assistance
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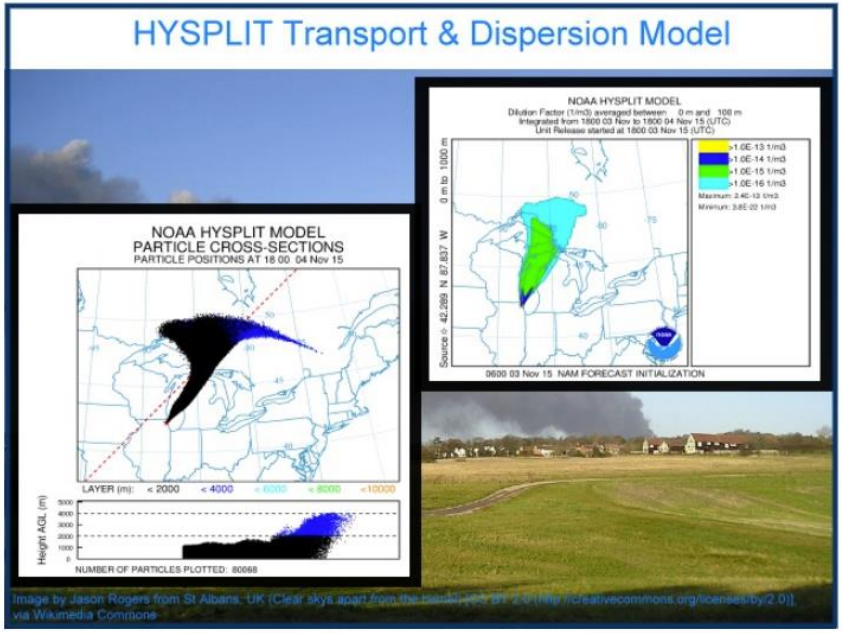
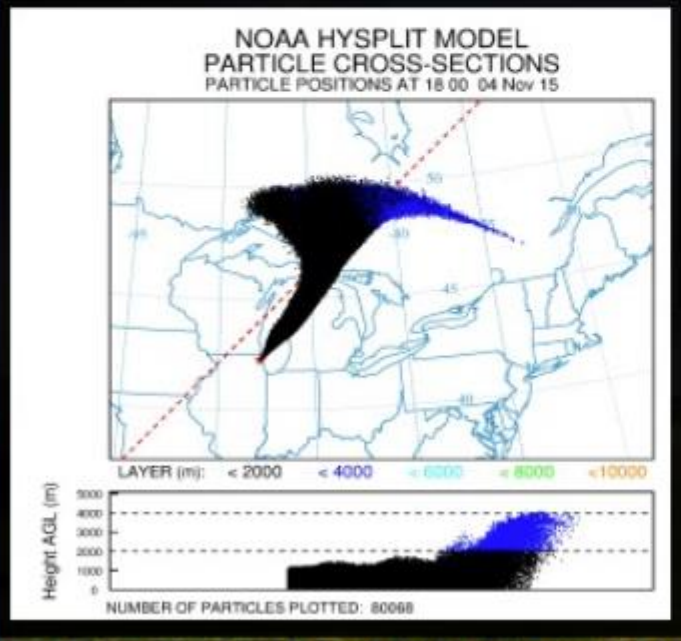
READY
Real-time Environmental Applications and Display sYstem

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



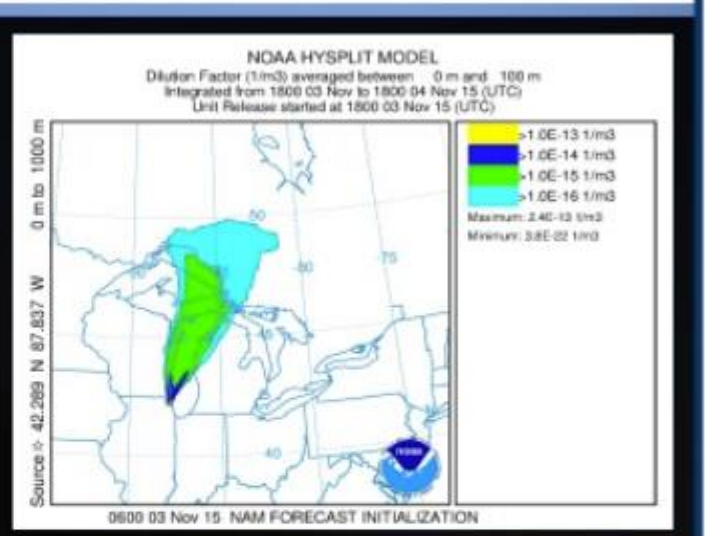
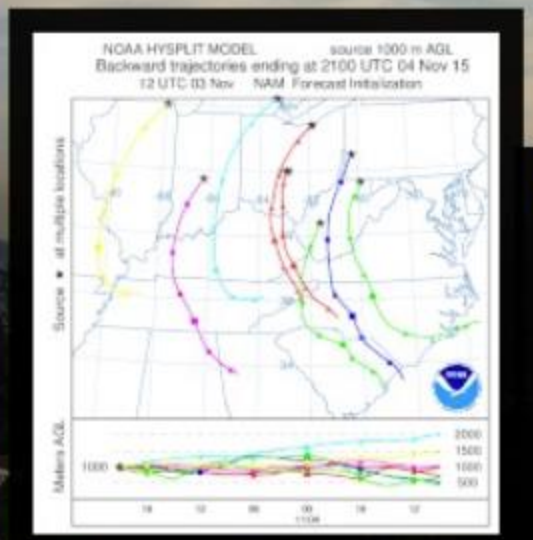
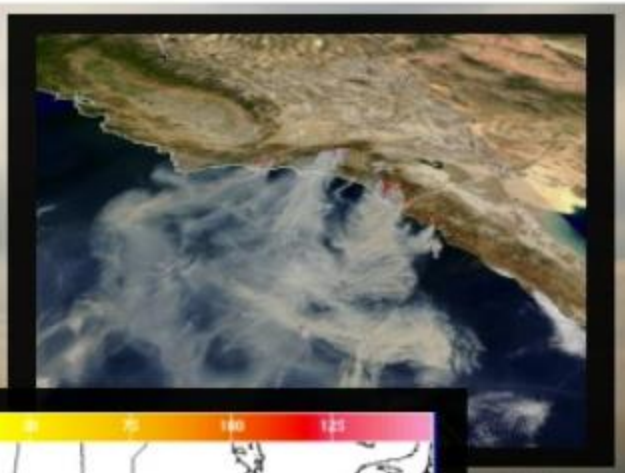


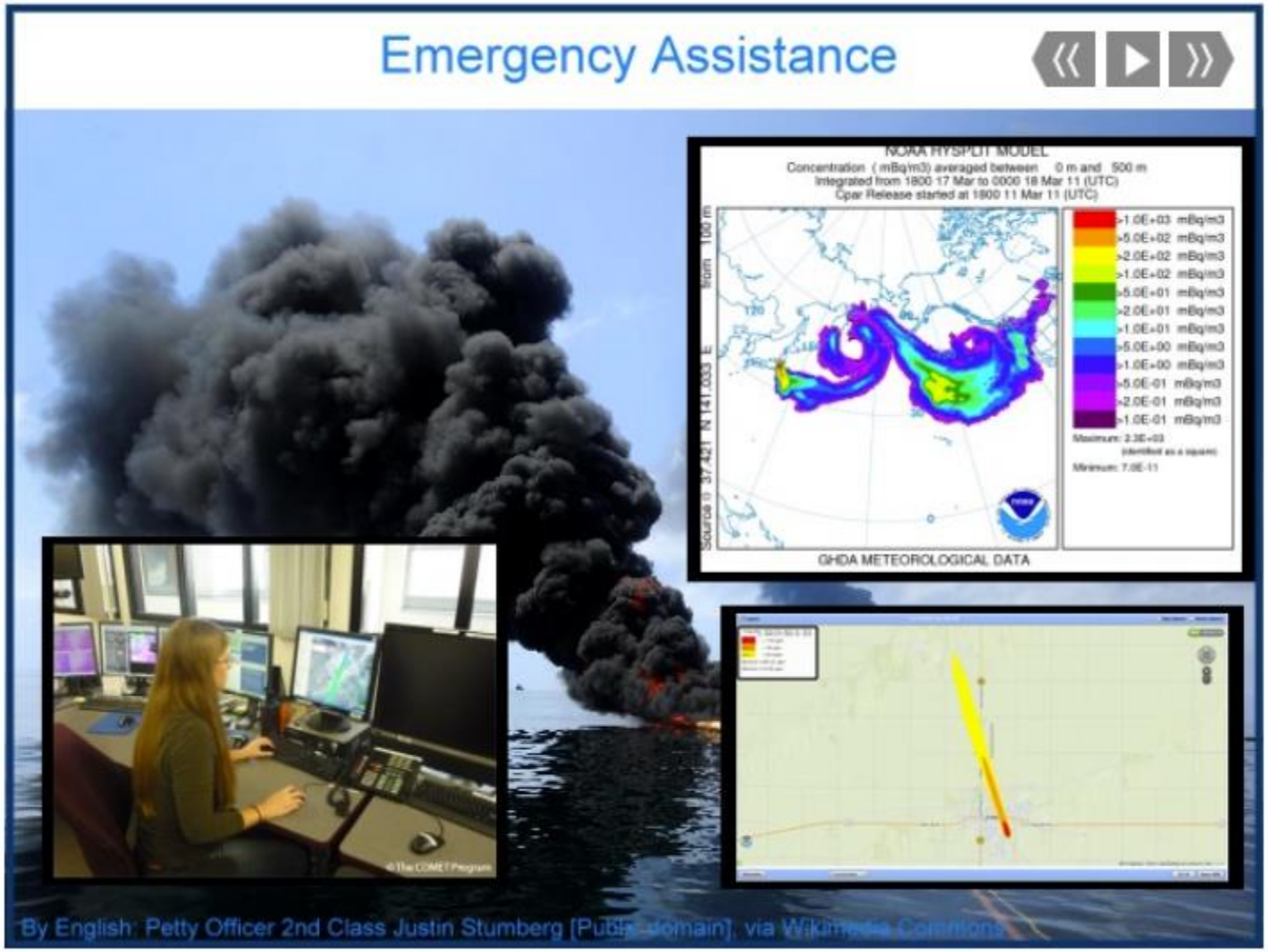
Image by Jason Rogers from St Albans, UK (Clear skys apart from the tailplane) [CC BY 2.0 (http://creativecommons.org/licenses/by/2.0)], via Wikimedia Commons

Air Quality Products



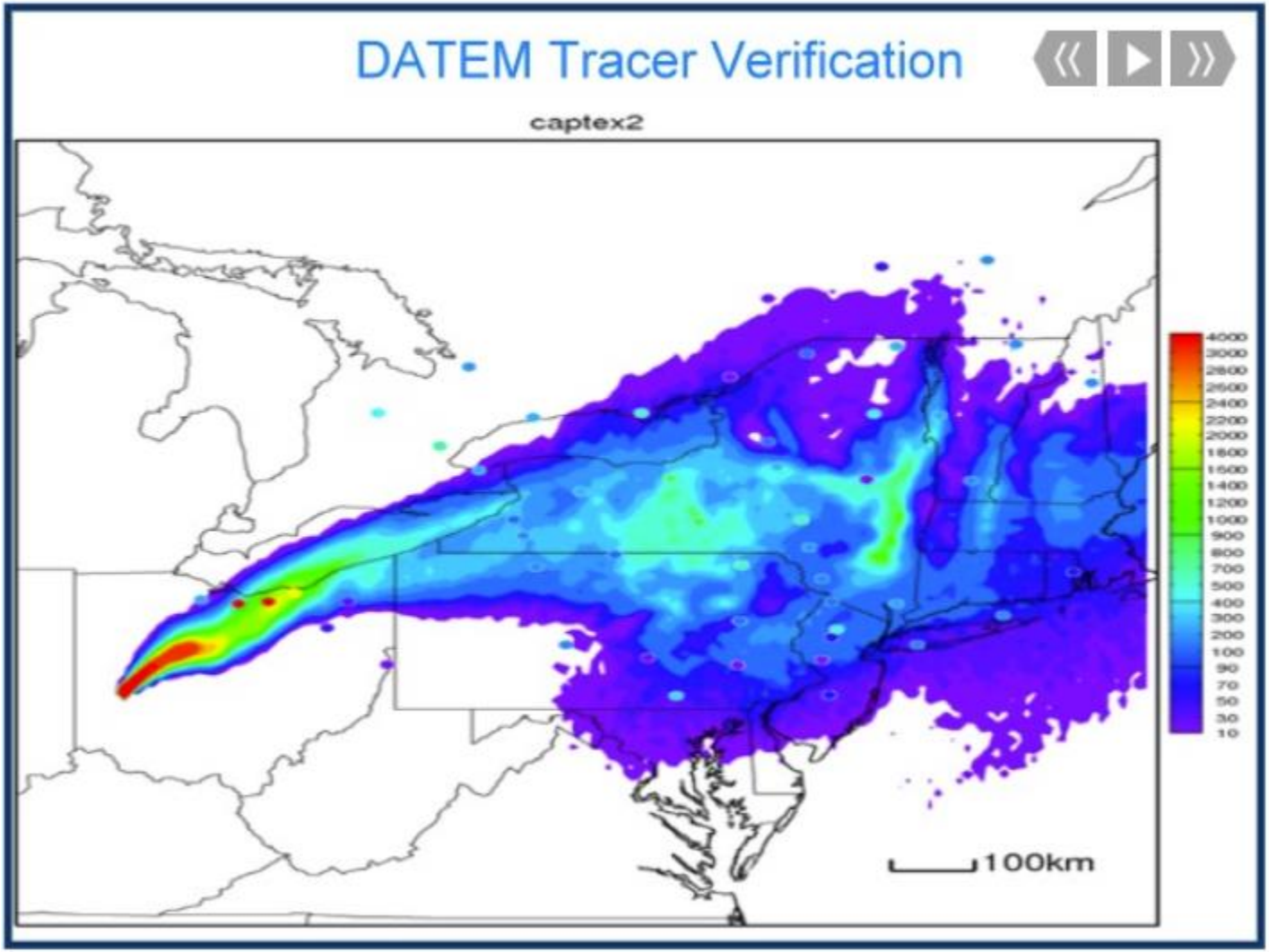


Emergency Assistance

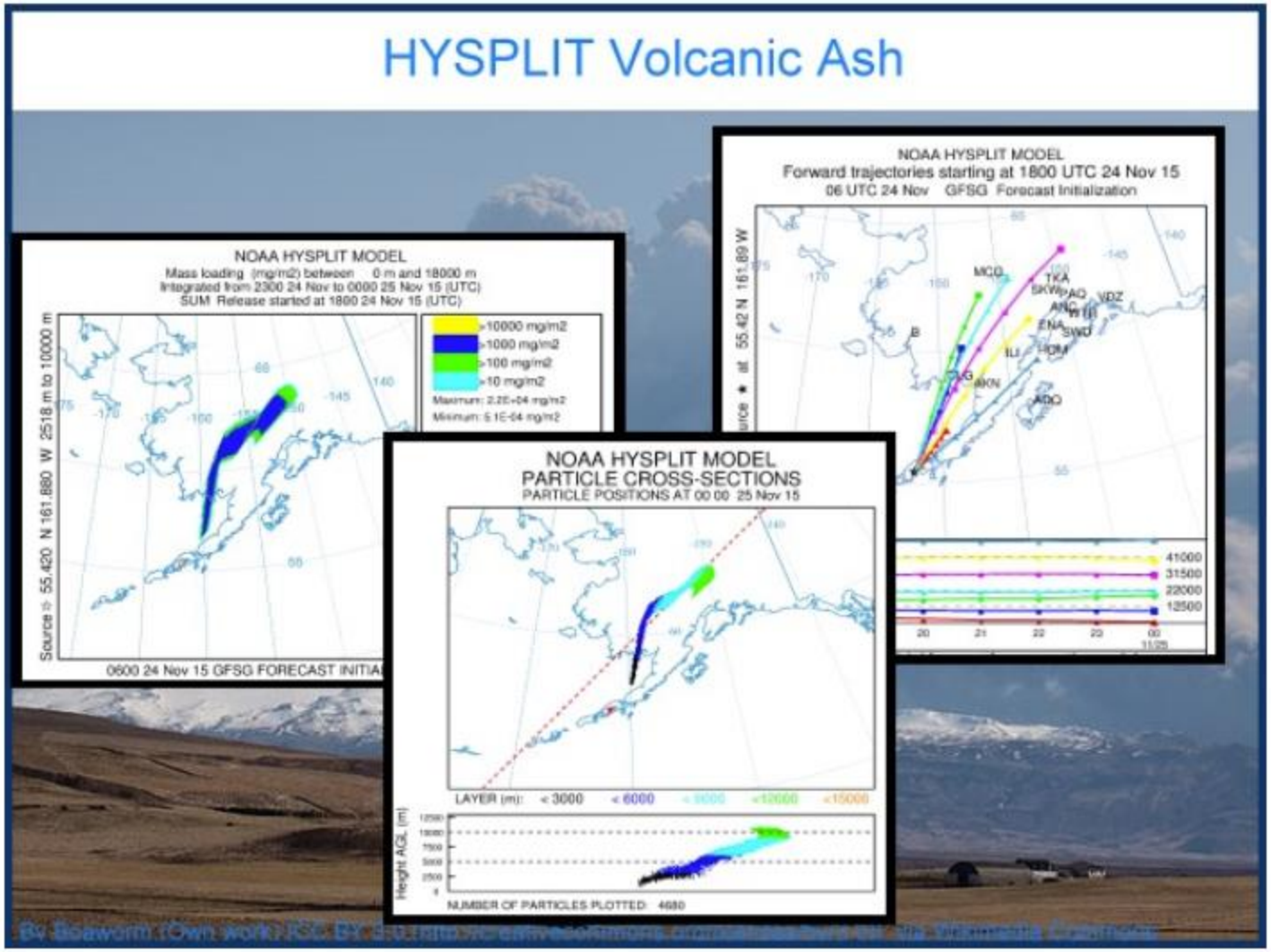


By English: Petty Officer 2nd Class Justin Stumberg [Public domain], via Wikimedia Commons

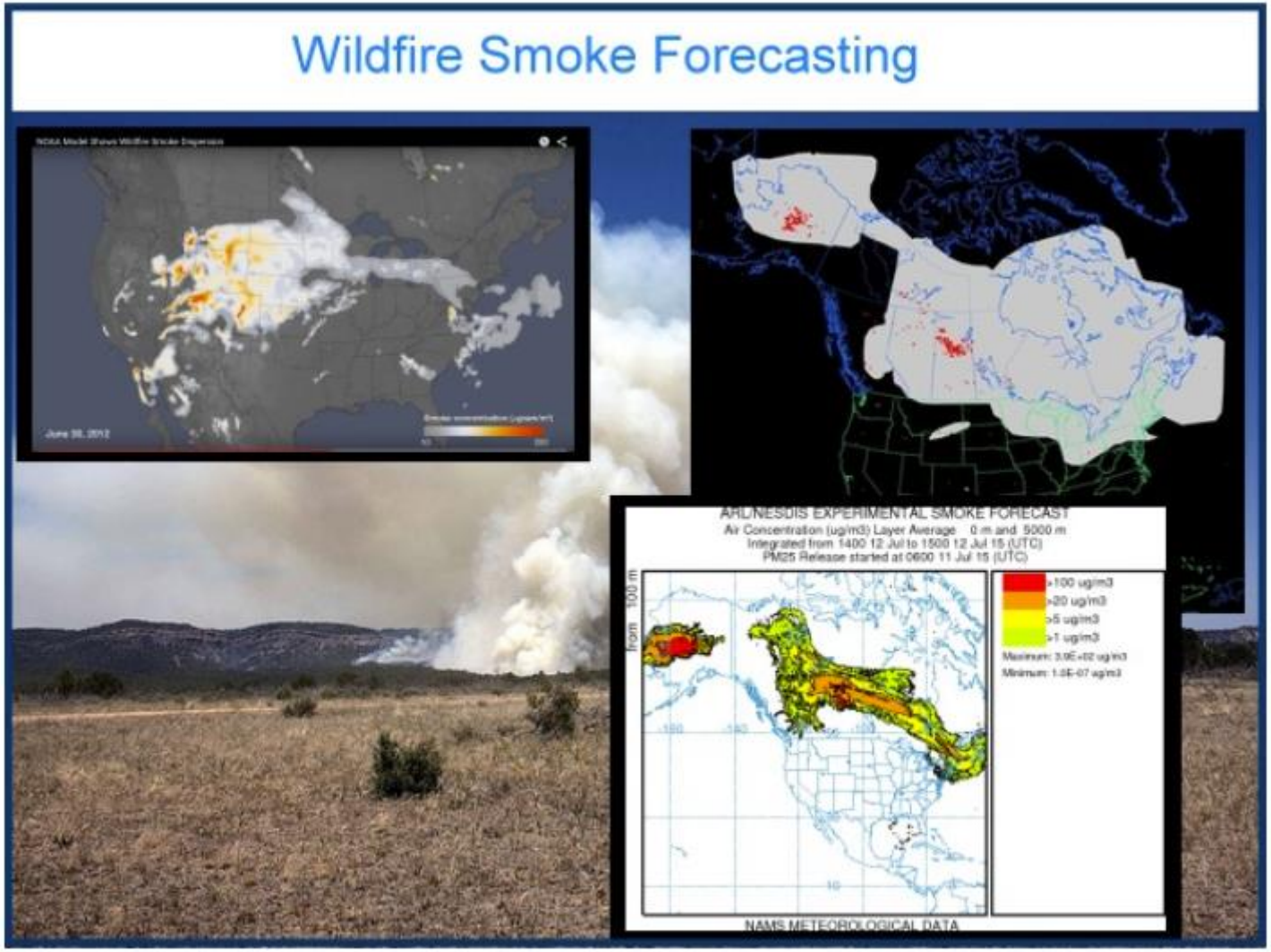
DATEM Tracer Verification



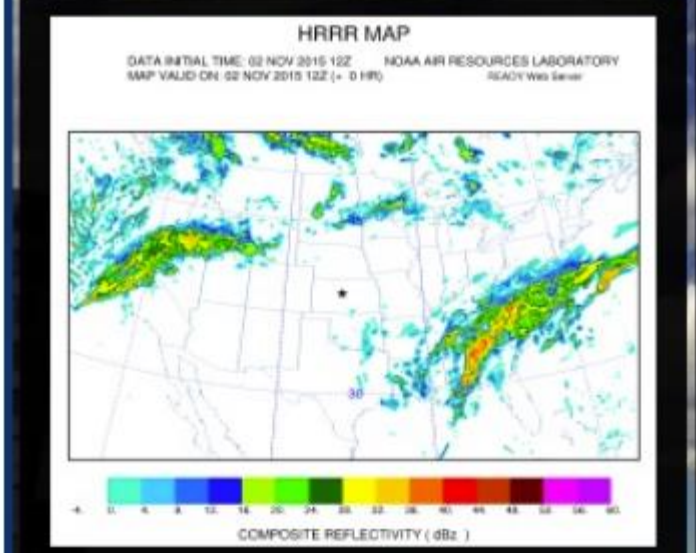
HYSPLIT Volcanic Ash

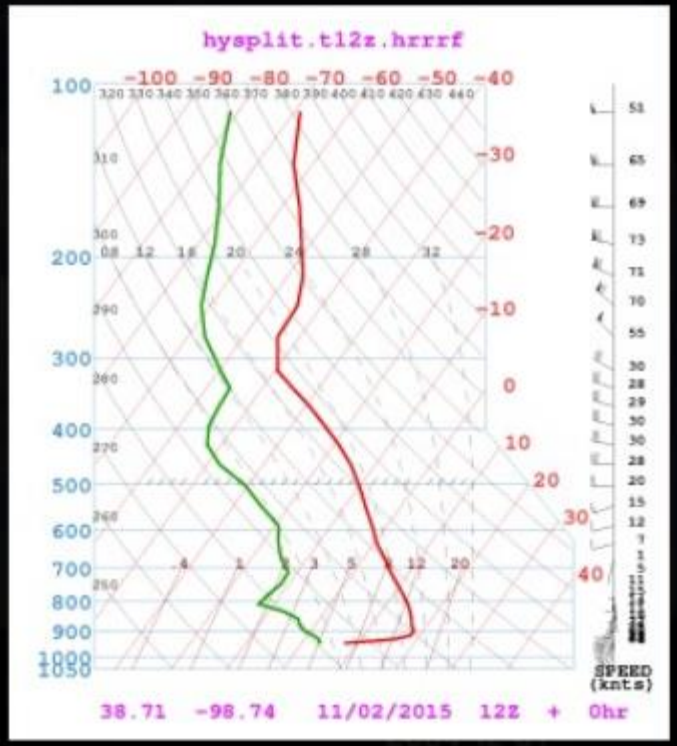


Wildfire Smoke Forecasting

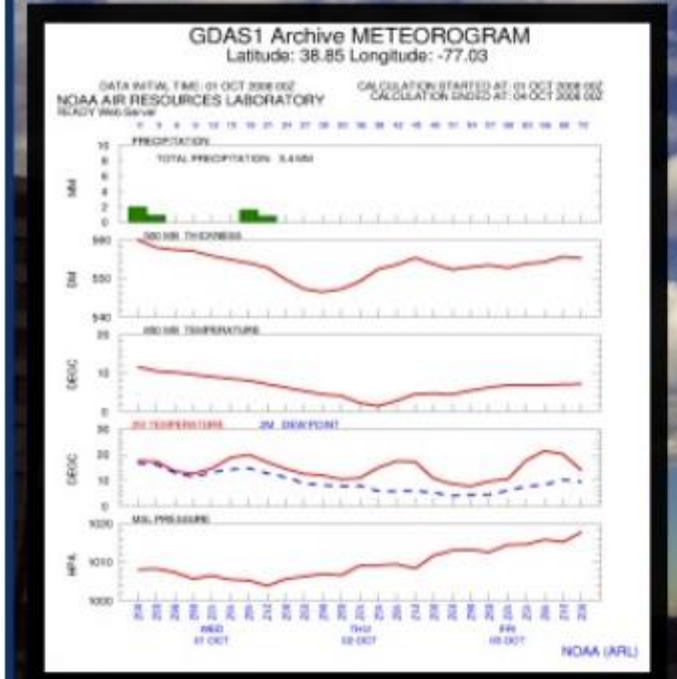


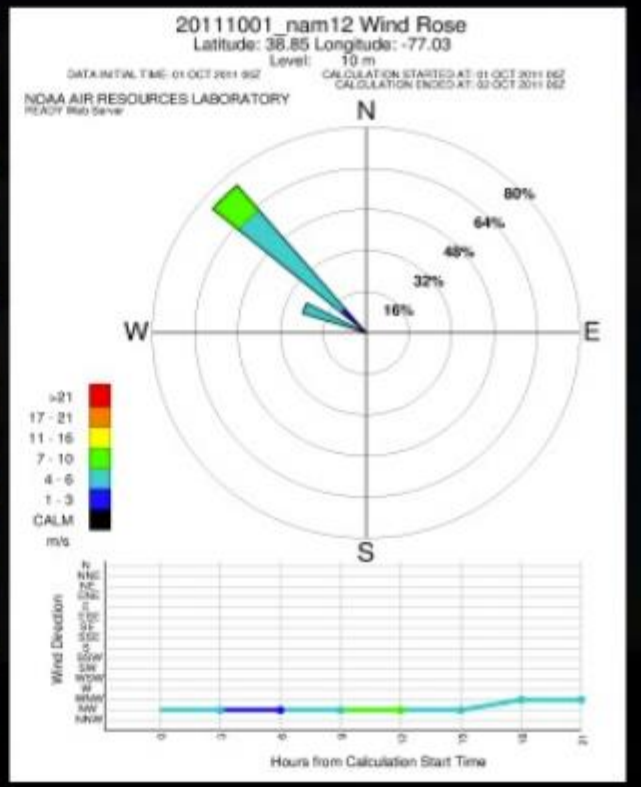
Current & Forecast Meteorology





Archived Meteorology






HYSPLIT
NOAA
Air Resources Laboratory
Advancing Atmospheric Science and Technology through Research
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HYSPLIT Modeling Group
Current & Forecast Meteorology
North America
Animations
Archived Meteorology >>
Archived Meteorology
READY
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)
Continue
Reset
OR click a location on the map below.

ready.noaa.gov/archives.php

Air Resources Laboratory

Advancing Atmospheric Science and Technology through Research

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Gridded Meteorological Data Archives

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 *(start this section if time permits)*
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:** *An overview of the HySPLIT applications from NCSR Demokritos.* 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:** *STILT Demonstration* 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:

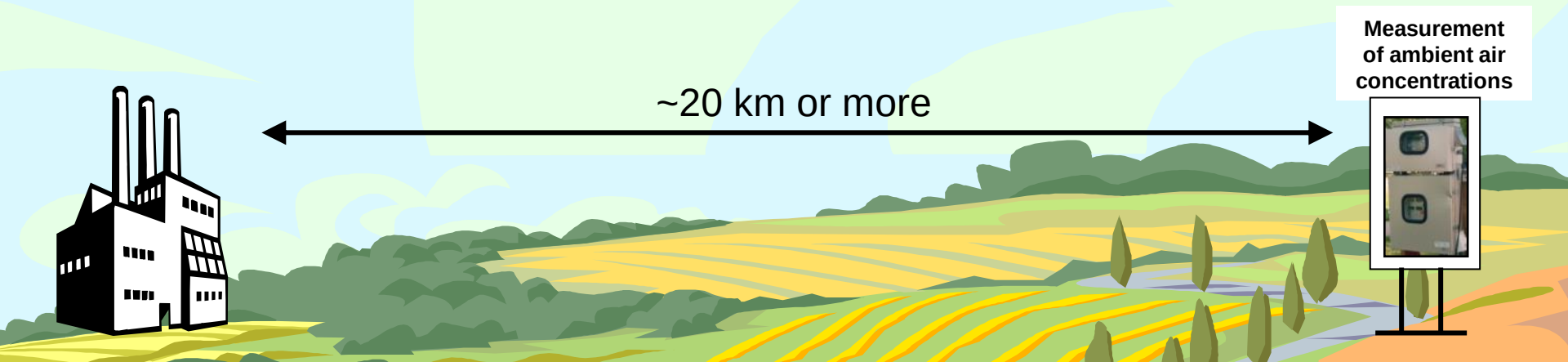
- **relatively simple terrain**
- **at least ~20 km or more away from any major sources**

CASE 2:

- **at the top of a relatively isolated mountain**

CASE 1:

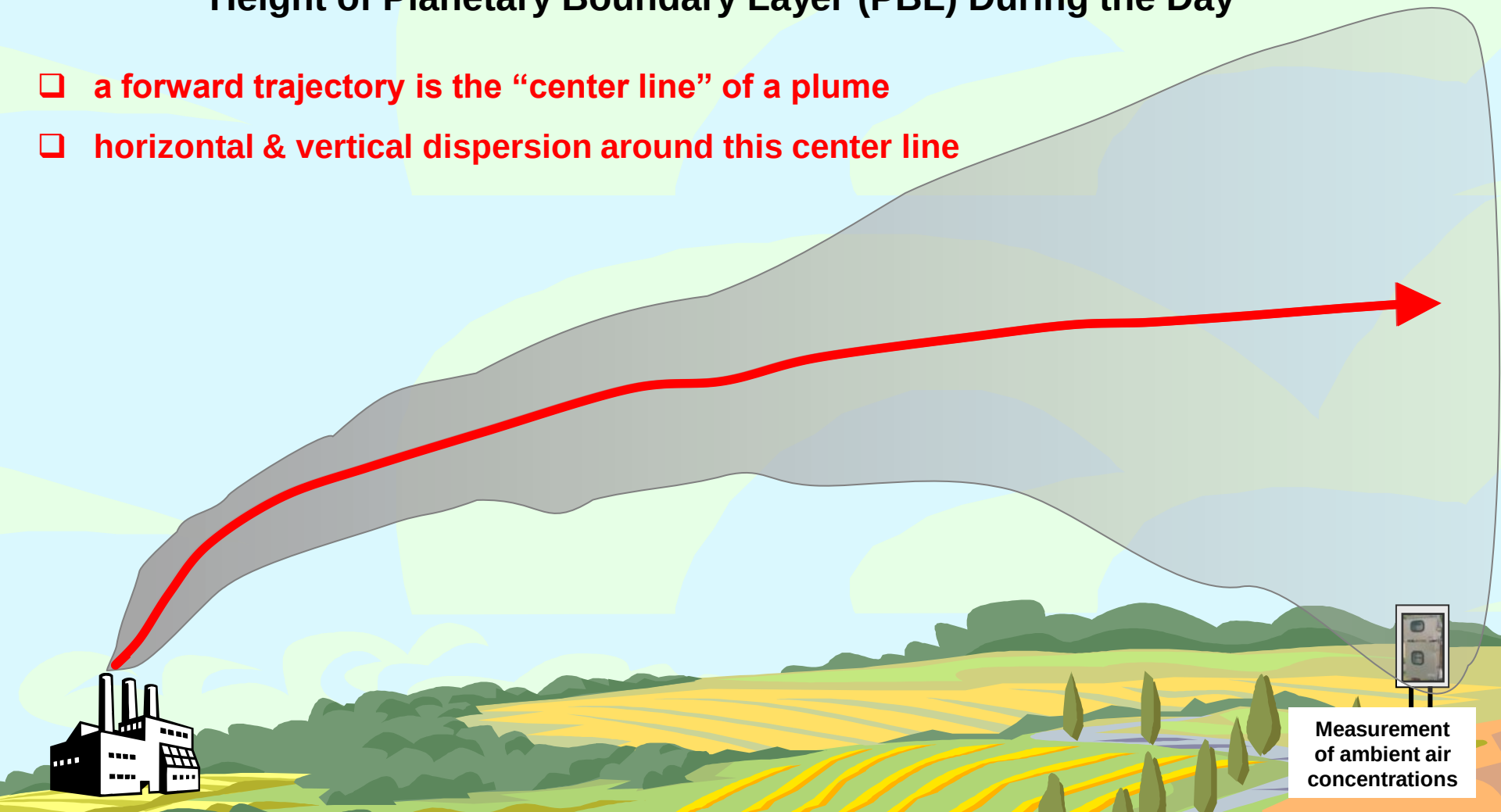
- **relatively simple terrain**
- **at least ~20 km or more away from any major sources**



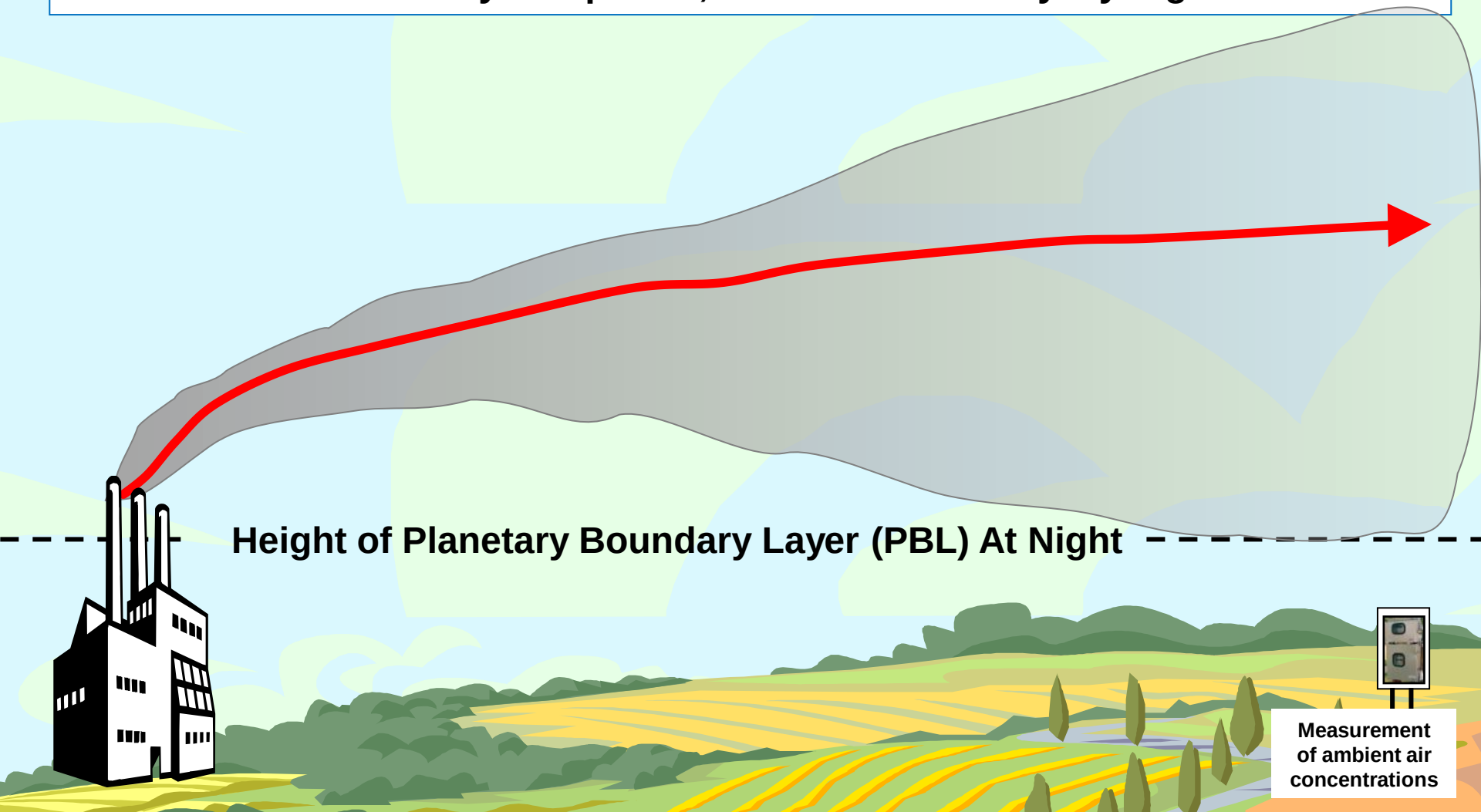
Greater than ~20km from the source,
if the forward trajectory from the source is within the PBL,
then the source can impact the measurement site,
even if the trajectory endpoint near the site is not at the height of the sampler…
This is because the PBL is relatively well-mixed during the day.

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

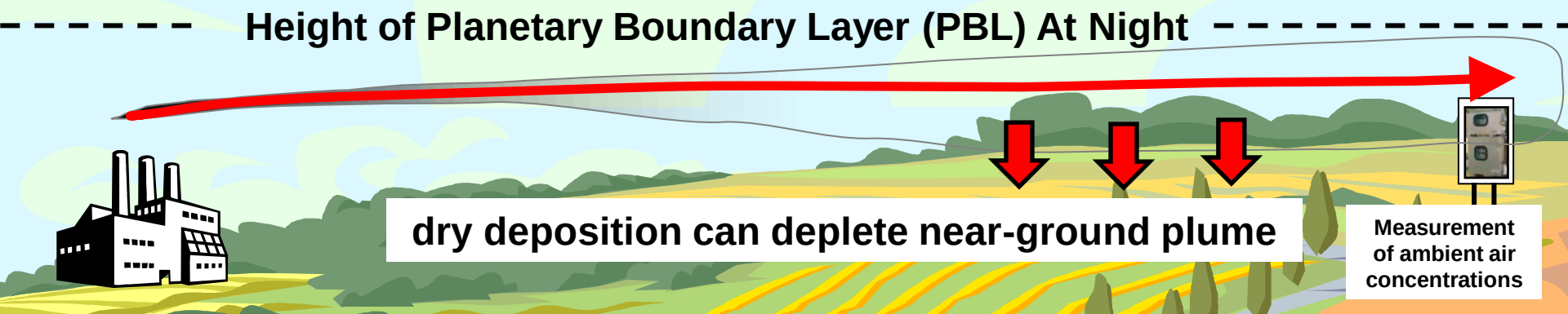
- **a forward trajectory is the "center line" of a plume**
- **horizontal & vertical dispersion around this center line**



- 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!**

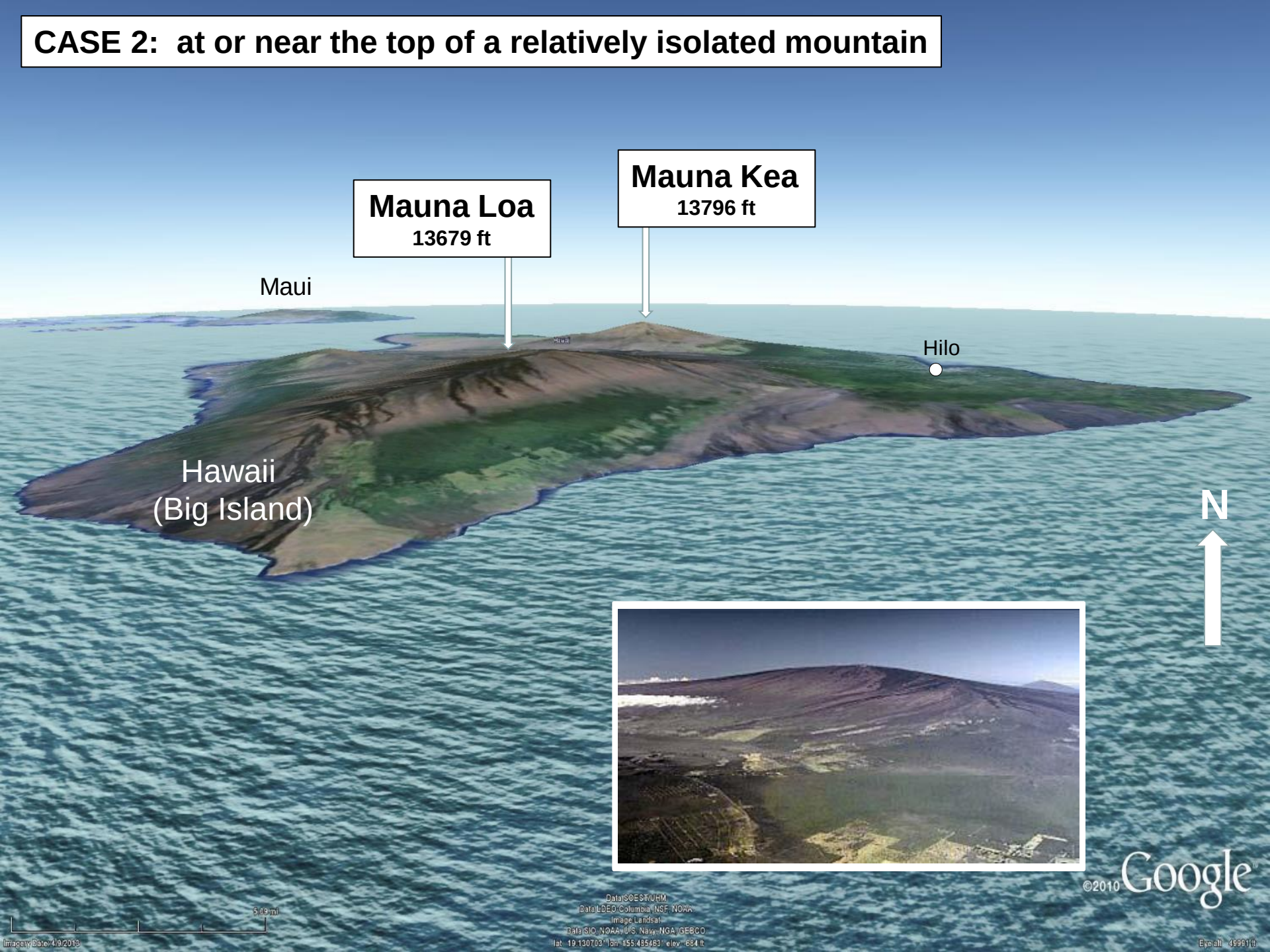


- What are the implications of these ideas for back-trajectories?
- What HEIGHT should one start a back-trajectory?
- If you start very low to the ground, e.g., at the sampler height, the trajectories often hit the ground… This may not give a representative back-trajectory
- "best" starting height for 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

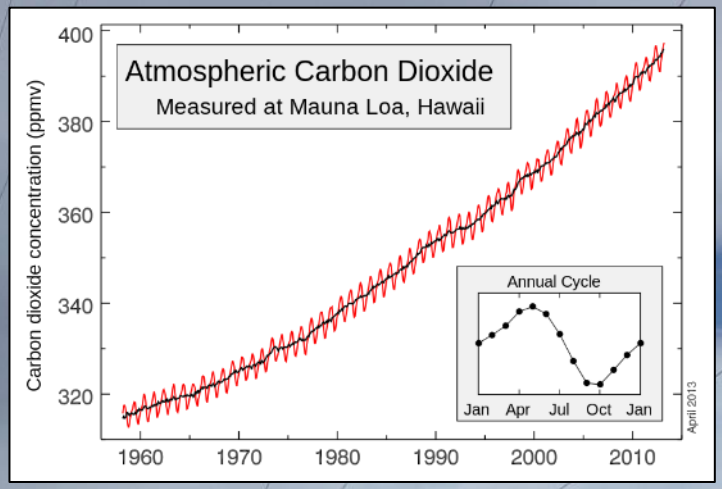
PBL Height

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

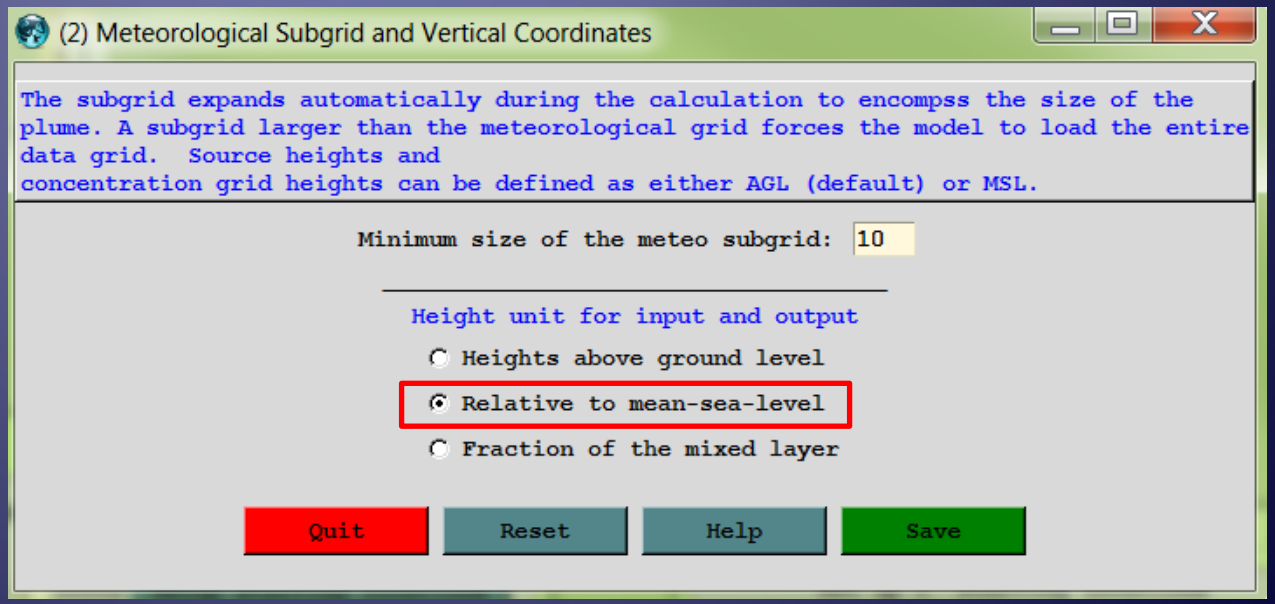



Mercury measurement instruments on roof and inside historic Keeling Building, near the summit of Mauna Loa

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 yo 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 t corresponding entry below will become a link. When you click on one of these links, you shou

   - 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 simulatio
     - 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.

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

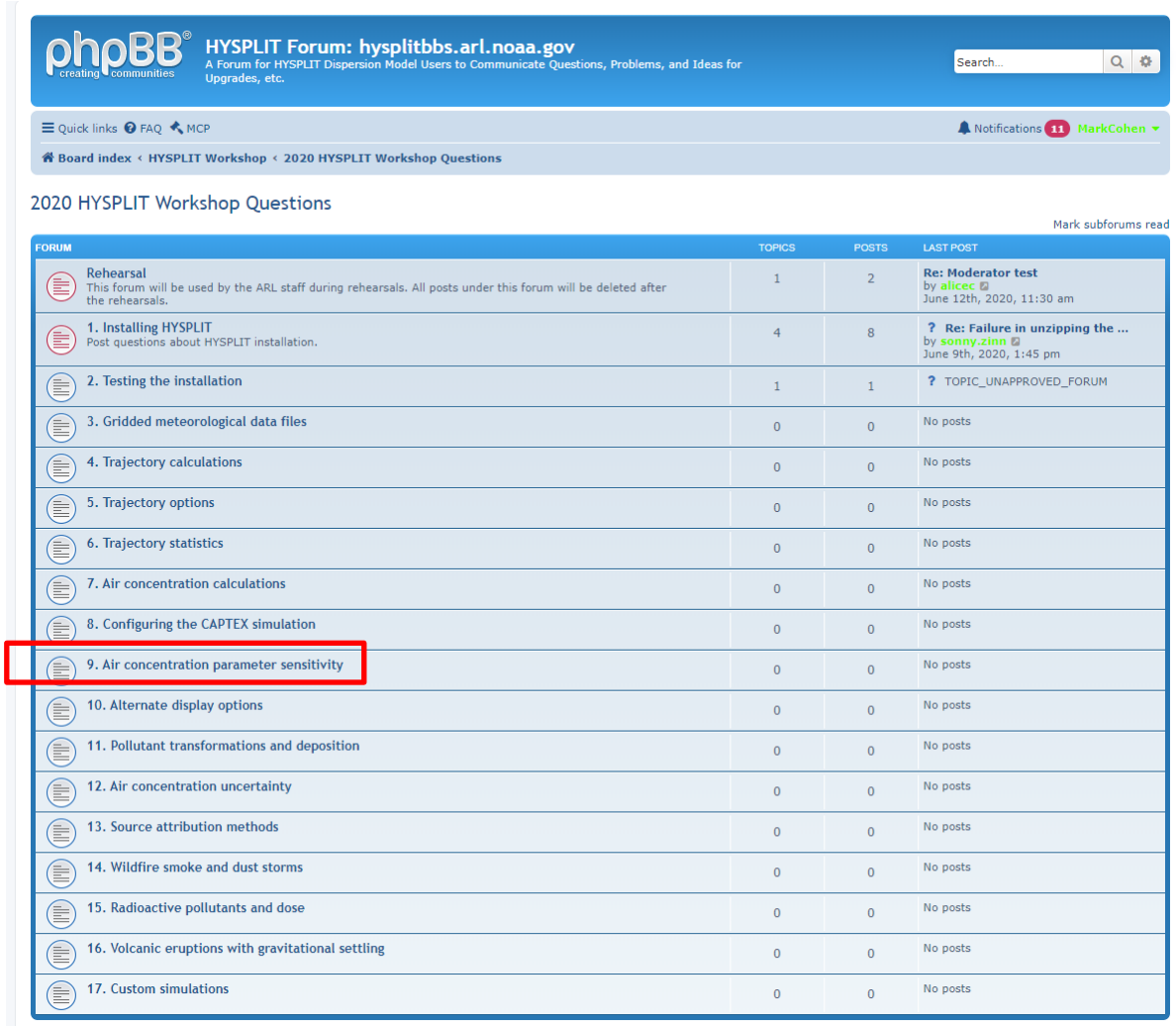
Day 2 – Wrap Up

- **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.

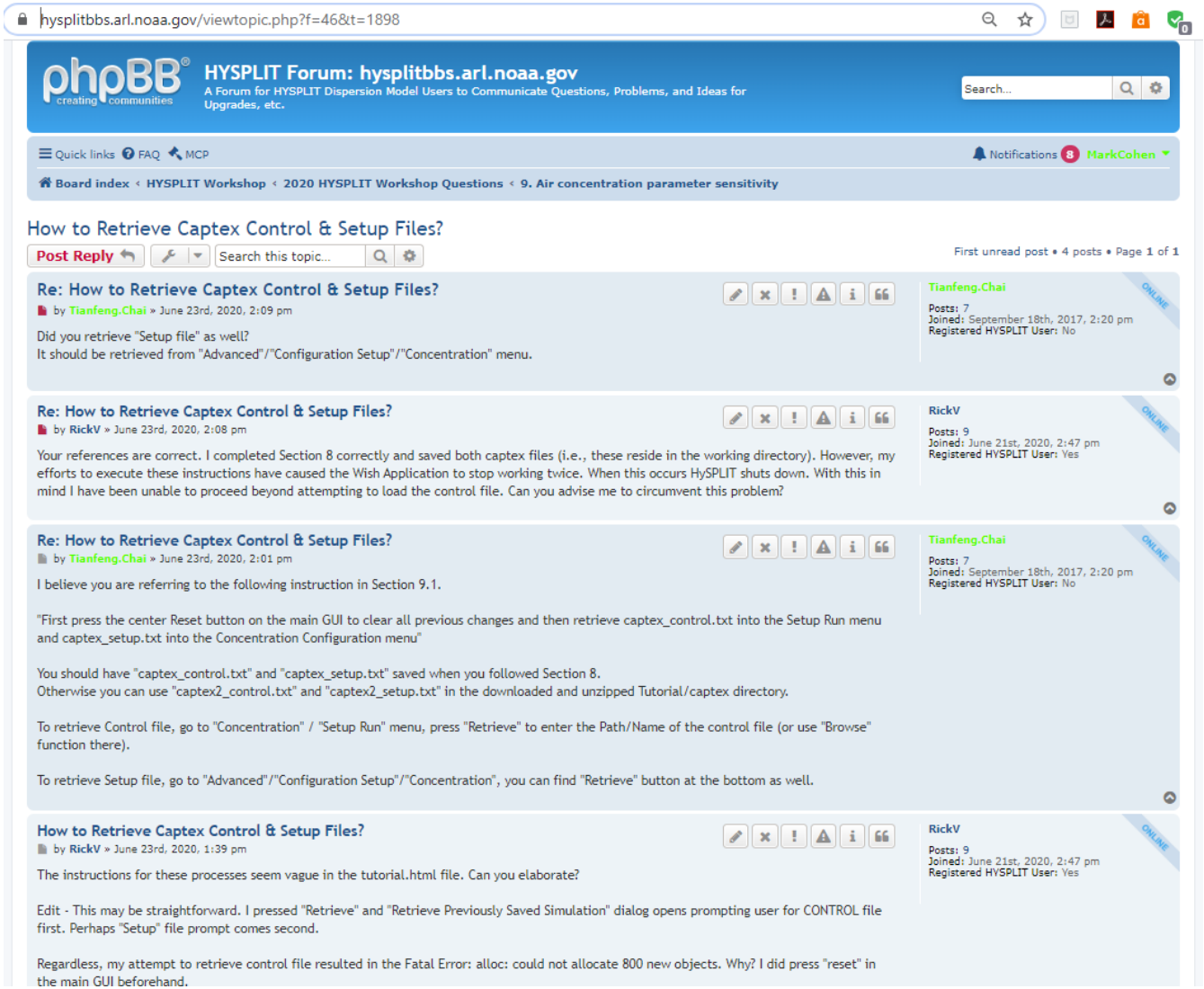


Asking Questions

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

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

Asking Questions



Asking Questions

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 *(start this section if time permits)*
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