In this section we will review the various directories that have been installed with HYSPLIT. Installation of the HYSPLIT package for computing trajectories and plume dispersion consists of a group of subdirectories under the main HYSPLIT4 directory. The contents of these directories are discussed in more detail below.

So if you open up file explorer under the HYSPLIT4 directory you'll see multiple subdirectories. I'm just going to cover some of them. For different operating systems you may have slightly different structure, but the directories I will be reviewing will be the same on all systems.

The first is the boundary files directory and this contains the land-use file, the roughness length use file, and a terrain file that HYSPLIT uses if that information is not already provided in the meteorological data file.   These files are relatively course

resolution, one degree latitude and longitude. There are additional high-resolution half degree files also provided. One of the exercises later on, we'll show you how to use the high-resolution files instead of the lower resolution ones.

The cluster directory is where you may store information about trajectory clustering, the individual trajectories, and the final clustering results. It's sort of the working directory for clustering.

The data2arl directory provides additional programs that can be used to convert meteorological data to a format that HYSPLIT can read. These programs are provided to you not in executable form but as the source code and the libraries required to do those conversions. For instance the programs that are provided are for meteorological models such as RAMS,

MM5, a decoder for GRIB1 data that are on latitude-longitude grids, the WRF/ARW output files, and a generic converter for GRIB2 format data files. These are relatively advanced topics and will not be covering them in this workshop. There are executables provided that can do some limited conversions of meteorological data. Again, this will be discussed in more detail in a later section.

The datem directory is the Data Archive of Tracer Experiments and Meteorology. This particular subset contains concentration data that have been measured during an experiment and this is kind of used as a reference so that any changes in how you configure the model you can go back and examine how the model calculations perform against real measured data. So everything you need is provided here. In this particular workshop we will be using these experimental data from the

Cross-Appalachian Tracer Experiment. That's CAPTEX.   We will be covering that in quite detail in many of the sections. The data report is available in this directory as well.

The document directory provides some more license information, general information about the model, in addition, for instance a file of updates. You can see what has changed in the model over the course of various versions. So this last version, if you scroll to the end, you can see which changes have been made.   Also important is the Technical Memorandum ARL–224. This document provides quite considerable detail into the equations and calculations of HYSPLIT so if you have any technical questions about how the model calculations are performed you can go to this document.

The examples directory provides examples

in terms of scripts for doing different simulations and in this workshop we will actually be going into many of these things in quite detail.   This was, you might call, an early version of the workshop that was distributed with each distribution.   With each HYSPLIT distribution.

The exec directory actually contains all the executables and there are 190 items in here. Not all of these executables are called by the graphical user interface.   So when you open up the graphic user interface there are, as you will see as we go on in the tutorial, there are many different programs that are accessed through the graphical user interface. But there are additional programs here as well.   And these can only be accessed through the command line.

The graphics directory contains the basic map background file that is used by

HYSPLIT.   It's an ASCII file that just contains latitude-longitude vectors for a global map.   That's a relatively course resolution map but that means it draws very quickly. We have options to use shapefiles as well.   The tutorial sections here will cover the use of shapefiles.   Several different public access shapefiles are provided for Canada, county boundaries, Mexico, and of course the world.

The guicode directory contains all the scripts that are used in the graphical user interface. Remember, the run HYSPLIT icon that is on your desktop? Double click on that just to show you. This opens up the graphical user interface. We will discuss this in more detail in the next section.   But what we're running here are essentially these scripts.   These scripts are that graphical user interface and when you click on that what you're actually running is this script, hysplit4.tcl.   It should not be run in

the guicode directory. In fact if you were to look at the properties of that desktop icon, open that, and you can see it's running hysplit4.tcl in the guicode directory but it starts in working. So everything that you do should be run from the working directory.

The graphics directory, we talked about that. The html directory is the directory that contains all the help files so when you open up the GUI and you ask for help what it's doing is opening up these files here in this directory. You do not have to look at the help files through the GUI. You can just click on the index file here and you can get the help files through your browser. In fact the browser does a much better job of displaying these HTML files than the GUI. The browser that's called in the GUI is rather elementary and sometimes the quality is not that good. But the main point of the using the help files within the GUI is

that it's context sensitive so that if you were in a particular menu when you click the help file, you'll get information about the options within that menu.   So that's why you would use it through the GUI, but for better quality you should go here.

The testing directory is provided with all installations. What it does is, it runs a basic script, in this case on the PC, a batch file that goes through and runs set of command line versions, different options with HYSPLIT.   So it's one way to test to see whether not your version is correct. Now when you get the executables already precompiled, we have done this test already.   But if you are working with a Linux version, or you did your own compilation, you may want to go through these tests to ensure that the model is working correctly. Another use of this is that you can find out how to script different examples, so if you find the example that

you're interested you can see how it was configured and there's a short explanation for each one. We will not go into much more detail on this.

The uninstall directory is just for the installer.

Updates, were not really doing that anymore. It used to be possible to, between releases, major releases, you could get short updates, small updates, but we found it too difficult to keep that working. It's much easier to provide a major update each time.

The last thing is the working directory and this is where all the action is. When you run HYSPLIT, the results, that is where it tries to read input files in this directory, and it writes output files to this directory. So that concludes how we are and what information you had during the installation, what's been provided. Now we can continue on with the

next section.