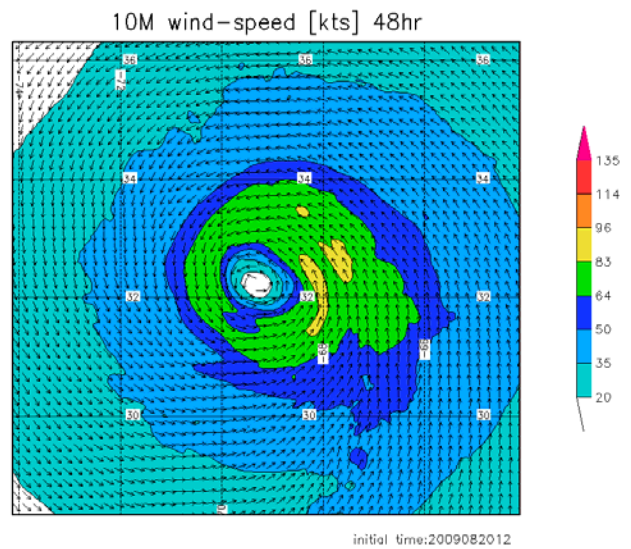
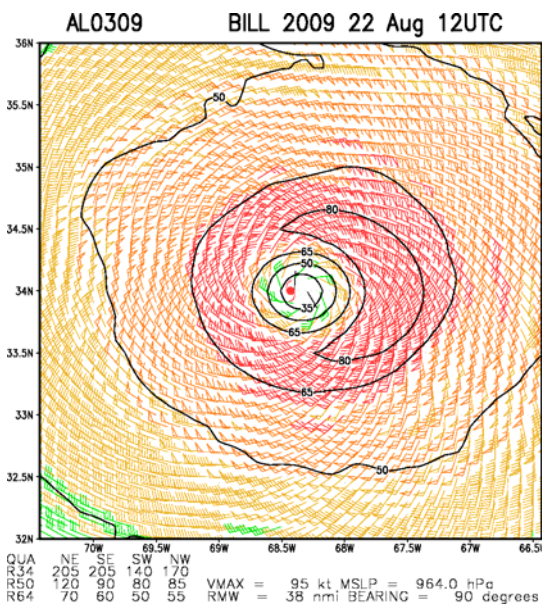


1) HWRF Portal

<https://storm.aoml.noaa.gov/hwrfxprojects/?projectName=HFIP+Demo+2010>

- The HWRF portal contains archived HWRF (Hurricane Weather Researching and Forecasting Model) data for storms from 2008-2011. It may be useful to compare the actual satellite images to the HWRF forecast images (if you have time). For example, if your presentation is focusing on a Rapid Intensification case, you may want to look up the model runs that occurred 12, 24 or 48 hours before RI occurred and compare the model forecast to what actually happened.

For example, I compared below the 48 hour HWRF forecast run with the multiplatform satellite analysis:



-It is then easy to compare the images side by side:

-Maximum wind, overall size/shape of wind field, track location (use lat/lon)

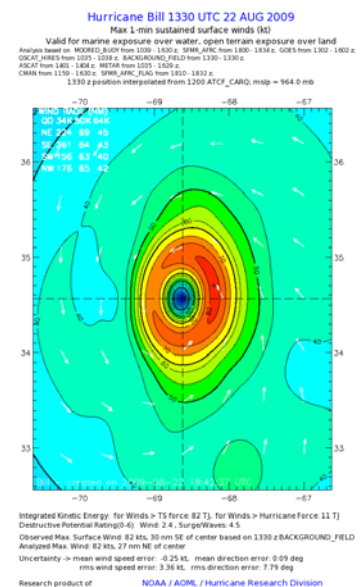
-Instead of using the Satellite wind analysis, you could use the initialization (0 hour) HWRF image to compare with a satellite image—since ideally the initialization should be very close to what is actually occurring since the model has not run forward and accumulated error.

2) HRD Observations

URL: http://www.aoml.noaa.gov/hrd/data_sub/hurr.html

-The In Situ (direct) measurement page includes data from HRD flights, including radar and dropsonde data. In addition, the data has been processed and compiled into more useful formats.

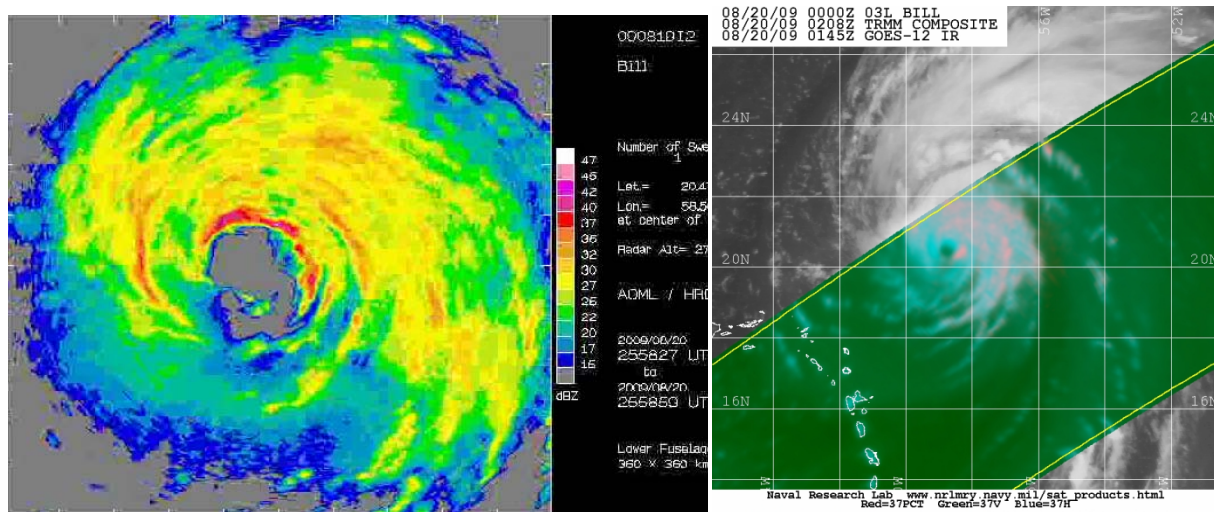
-The image on the right uses satellite data as well as flight, surface, and buoy data to create a contoured wind analysis. It is comparable to the multi-platform satellite wind analysis on the RAMMB site.



So now you have access to three images of the wind field from 3 different sources:

- 1) Satellite analysis (RAMMB)
- 2) Model Forecast (HWRF)
- 3) Observations + Satellite combined image (HRD)

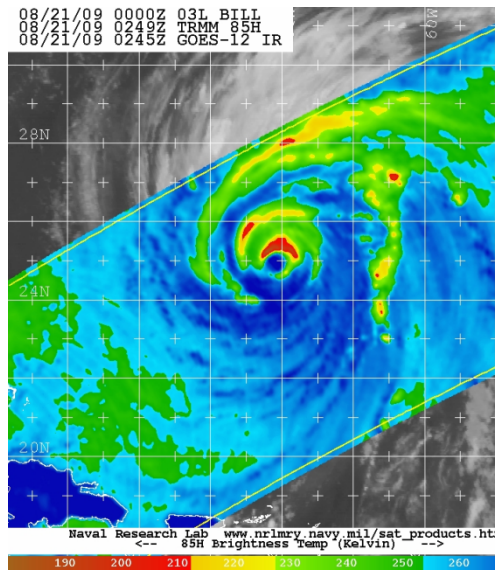
Another useful tool is the radar data available on the HRD site. The best way to access the data is to use the animations, and then select a frame where the plane was in a good spot to see the whole storm. You may find it useful to compare the radar to microwave images:



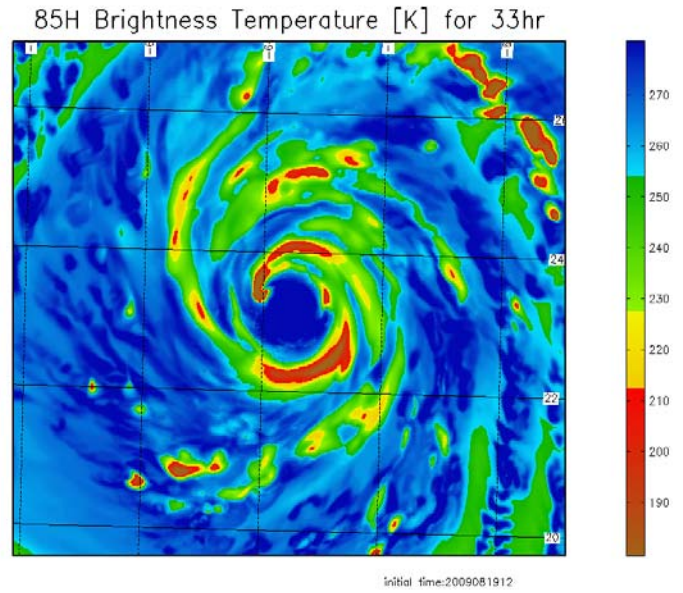
- Note that both the radar and 37 GHz color show Bill has a partial eyewall, open to the South-Southwest.
- The radar images may also help you determine whether an Eyewall Replacement Cycle is ongoing or not.

Other HWRF Products:

- 37 and 85 GHz forecast images—literally the model forecast of what the 85 or 37 GHz (see next page).
- I am not sure that these comparisons are going to help you with the final project, but it is at least interesting to compare the actual microwave image to the forecasts. However, if the forecast is wrong, the microwave image is going to be wrong also.
- If you use these images, be careful with dates/times. The model run starts at a certain time and then counts forward. In the model forecast below, I started at 08/19 1200 Z and ran ahead 33 hours to reach 08/20 0300 Z, which is close to the TRMM overpass at 08/21 0249 Z.
- As you can see from the images, the HWRF forecast has room for improvement...



TMI 85 GHz-H Image



HWRF 85 GHz-H 33 hour forecast, initialized
08/19/2009 1200 Z

3) Florida State TC Models Archive Page

URL: <http://moe.met.fsu.edu/~acevans/models/archive/>

-Good archive for track and intensity model data.

Track Forecasts: To best interpret, you need to know how each set of models works (at least conceptually), which can sometimes explain the spread. The two types of models that are most likely to show **strange tracks** are:

-**CLIP:** Climatology model—based purely on what other storms have done in the past

-**BAM:** Beta Advection Model—relies heavily on climatology and the Coriolis “beta effect” which slowly recurves hurricanes.

-The rest of the models are either statistical models, dynamical models, combined statistical-dynamical models, or consensus models which combine some of the other models together.

-Usually the tracks from the rest of the models can give a fairly good idea of the forecast—although the NHC forecast has been shown to be superior to the raw model tracks.

