

Projects Involving Flight Level Data from Tropical Cyclones

Overview of projects related to the Flight Level Data

This wiki covers two projects:

- **Development of an HWRF Diagnostics Module to Evaluate Intensity and Structure Using Synthetic Flight Paths Through Tropical Cyclones**
- **Extended Flight Level Dataset for Tropical Cyclones**

An Extended Flight Level Dataset

Goals of this Project

This project seeks to extend and standardize all available hurricane flight level data into files using a common NetCDF format. Once standardized, data are being processed and parsed into radial legs in a similar fashion as the Willoughby-Rahn dataset (which ends in 2001). The goal is to eventually have a dataset of similar quality as the W-R dataset to facilitate many new research uses. Initially effort is being focused on completing the new extended dataset for the period 1999-2012. In time, a data rescue effort may be mounted to extend this further back in time. This initial effort (for 1999-2012) is being funded by the Risk Prediction Initiative (RPI2.0) as a component of the "Improved Database of Tropical Cyclone Size Parameters" project.

Funding

- Risk Prediction Initiative (RPI2.0), Bermuda Institute of Ocean Sciences (BIOS)

Investigators

- PI: Jonathan L. Vigh (NCAR/RAL/JNT)

Collaborators

- Christopher Williams (NCAR/RAL/JNT)
- Neal Dorst (NOAA/AOML/HRD)
- Hugh Willoughby (Florida International University)
- Frank Marks, Jr. (NOAA/AOML/HRD)
- Daniel Chavas (Princeton University)
- Russell St. Fleur (NOAA/AOML/HRD)
- John Knaff (NOAA/NESDIS/RAMMB)
- Barry Damiano (NOAA/AOC)

Dataset Users

- Jonathan Martinez (SOARS protégé, now at University of Hawaii)
- Michael Bell (University of Hawaii)
- Daniel Stern (NSF Postdoctoral Fellow, soon to be Naval Research Laboratory)
- Chris Slocum (Colorado State University)

Project Scoping and Milestones for the Extended Flight Level Dataset

**Development of an HWRP Diagnostics
Module to Evaluate Intensity and Structure
Using Synthetic Flight Paths Through
Tropical Cyclones**

Goals of this Project

This project seeks to develop a diagnostics module for the purpose of conducting an "apples-to-apples" comparison between HWRP model simulations and the direct *in situ* and remote sensing observations from aircraft. The structure of the wind field at both the surface and at flight level are the primary foci of this effort, but additional evaluations are also possible using extrapolated sea level pressure, flight level temperature, and other thermodynamic variables.

Funding

- Development Testbed Center Visitor Program (FY2012)

Investigators

- PI: Jonathan L. Vigh (NCAR/RAL/JNT)

Collaborators

- Ligia Bernardet (CIRES/NOAA)
- Vijay Tallapada (NOAA/NCEP/EMC)
- Chanh Kieu (NOAA/NCEP/EMC)
- Eric Uhlhorn (NOAA/AOML/HRD)
- Neal Dorst (NOAA/AOML/HRD)
- Robert Rogers (NOAA/AOML/HRD)

Funded Proposal (pdf)

**Project Scoping and Milestones for
Synthetic Flight Profiles**

Processing of HRD and AFRES Flight

Level Data

**Summary of Flight Level Data
Processing by Storm Plots with
Known Problems**

Supported Data Formats

**Correspondence of Variables Between
Raw Data Files and the Common Data
Format**

Project Resources, Tools, and Tips

[Code Map for the Flight Level Dataset Codeset](#)

[Tools and Miscellaneous Info](#)

Strategy for Sampling HWRF Model Storms

[Data locations for HWRF runs](#)

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Attachments

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| PDF File vigh_project_description_2012.pdf | Mar 04, 2013 by Jonathan Vigh |

Recently Updated

- [Summary of Flight Level Data Processing by Storm](#)
Feb 11, 2018 • updated by Jonathan Vigh • [view change](#)
- [Guillermo - 1997](#)
May 11, 2016 • updated by Jonathan Vigh • [view change](#)
- [Danny - 1997](#)
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- [Code Map for the Flight Level Dataset Codeset](#)
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