Web-based Display and Diagnostic System Development

- Display is designed using modular and flexible technology:
  - OpenLayers Mapping tools
    - Platform independent
  - MySQL database
  - Primary input: ATCF decks
- Diagnostic evaluation tools
- Consensus forecasts
- Fixes and best track editing
- Real-time access through the HFIP webpage:
  - http://www.hfip.org/nhc-display
NHC-Display

- Display latest hurricane track and guidance in real time
- Archive and display historical data
- Can be used for the educational or training purposes
- Designed using open source products
System Requirements

- Java 1.8+
- MySQL
- Apache/Tomcat
- Read from ATCF decks (A-deck, B-deck, F-deck)
- Access to ATCF files
Data sources: Database

• Historical archive of hurricane best track starting from 1851
• Primary database
  – A-deck
  – B-deck
  – F-deck
• Separate database for the interactive hurricane data editing and educational purposes
  – B-deck
  – F-deck
Data sources: ATCF files

• Current ATCF formatted data files
  – A-deck
  – B-deck
  – F-deck

Files can be archived to the database or read directly from files
Web Application

- Runs under Apache/Tomcat
- Uses online open source base maps
- Offline maps are available if online maps can’t be accessed
- Displays gridded data layers
- Produces images and ATCF files
NHC-Display: View Best Track

- Displays best track of the selected storm
- Fixes and wind radii can be displayed
- Page refreshes every 5 min to display updated data
NHC-Display: View best track

- Display all available information for location along the track
NHC-Display: View Guidance

- Displays best track and model data of the selected storm
- Fixes and wind radii can be displayed
- Consensus track can be computed and displayed
- Color track by model, init date or intensity
NHC-Display: View Guidance

- View tracks by init or valid date
NHC-Display: Plots

- Display time series of maximum wind speed and mean sea-level pressure
- Plots can be saved as images
NHC-Display: Data Editing and Correction

- Best tracks and fix locations loaded into working database that can be edited and exported back to ATCF file
NHC-Display: Base layers and gridded data

- Several open source base layers are available
- Sea surface temperature is available as a gridded base layer
- Possible to add more gridded data layers
NHC-Display: View Seasonal

- Display all events for the selected year and basin
Summary

- A tropical cyclone HFIP display and diagnostic system has been developed.
- Modular and adaptable web-based display framework to allow for inclusion of additional diagnostic evaluation tools, gridded products, etc.
- Access to tropical cyclone forecasts are able to the community for publically available forecasts: http://www.hfip.org/nhc-display