HFIP Web Support and Display and Diagnostic System Development

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NCAR/Research Applications Laboratory

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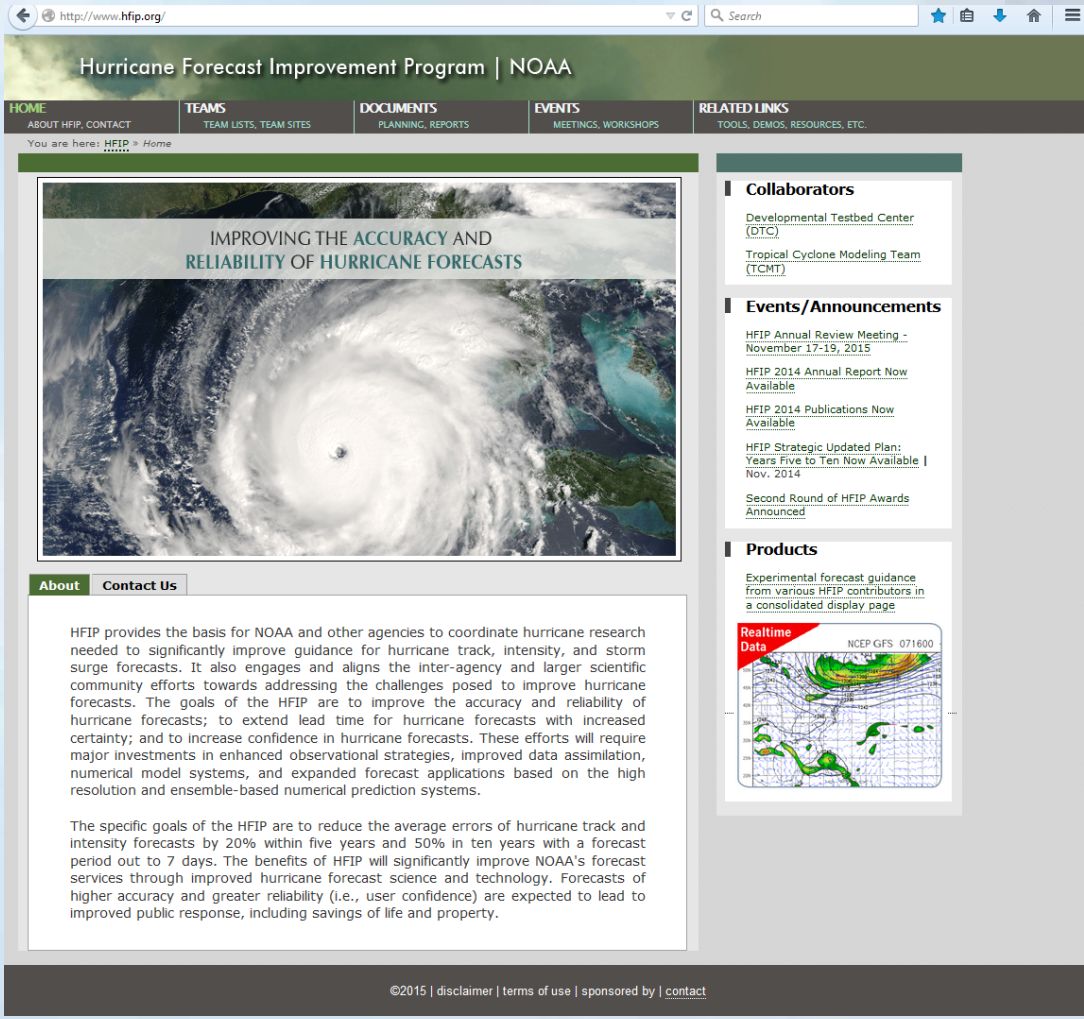
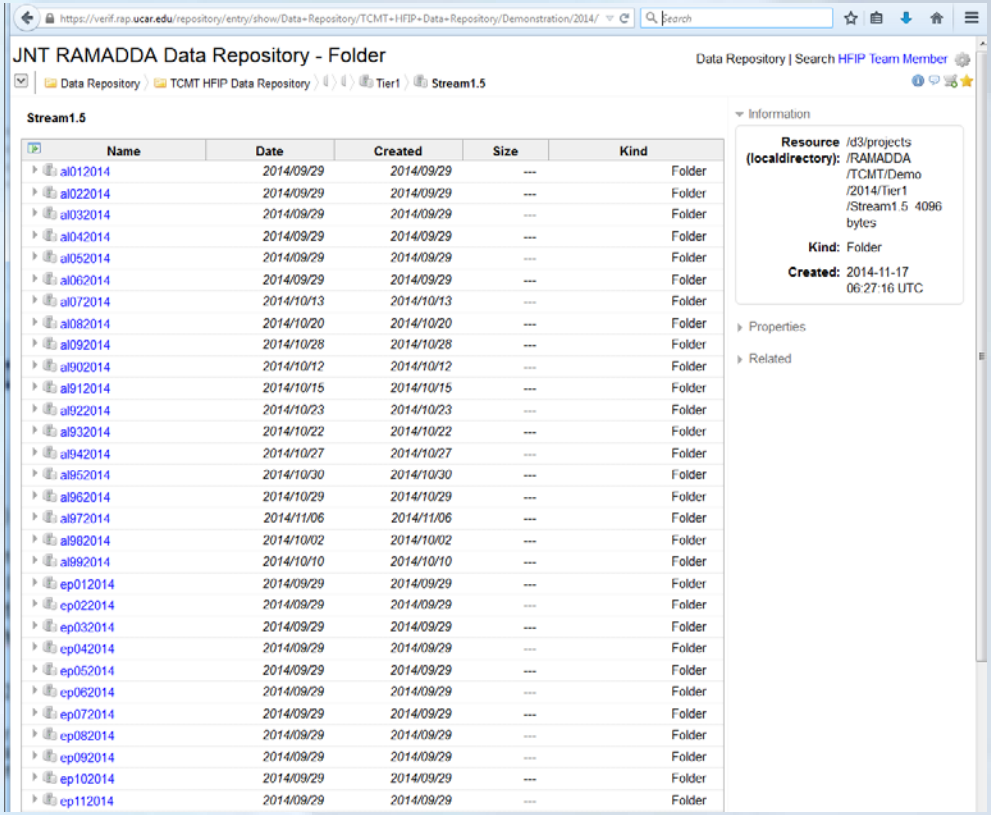
HFIP Project Office Support

- **HFIP website development and maintenance**
- **HFIP team group email management**
- **HFIP workshop support**
- **HFIP database development**
- **Development of web-based display and diagnostic system**



HFIP Data Service

- Available data include:
  - Tier 1 (Stream 1, 1.5, and 2) and diagnostic files
  - 2010-2014 Retrospective periods
  - 2011-2015 Demonstration periods
- Designed using RAMADDA database system framework
- Improved access for selecting and downloading data
- Future Enhancements
  - Access to Tier 2 and forecast product imagery through an online ordering system.
  - Tier 2 data products stored at NCAR Mass Store system



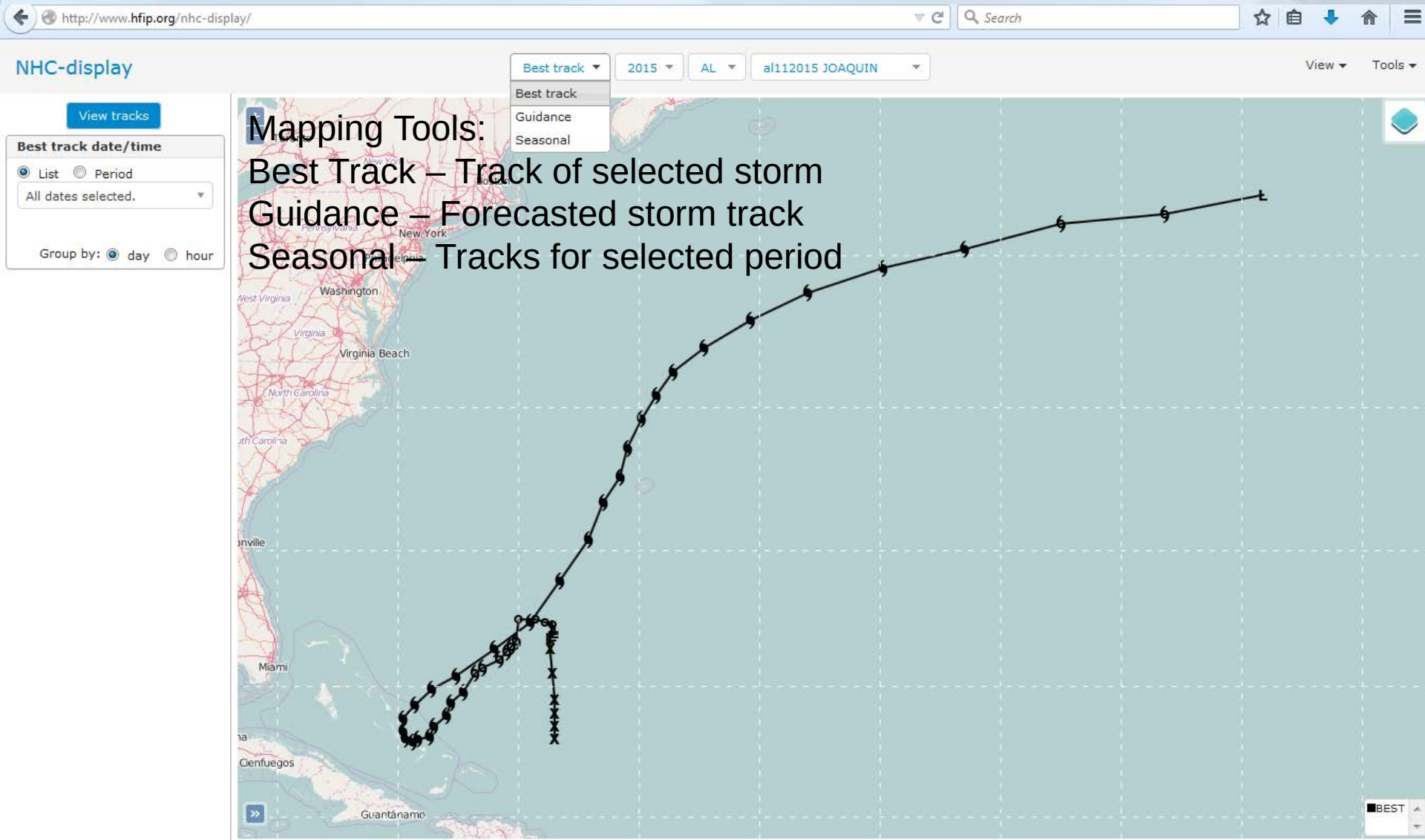
https://verif.rap.ucar.edu/repository

Web-based Display and Diagnostic System Development

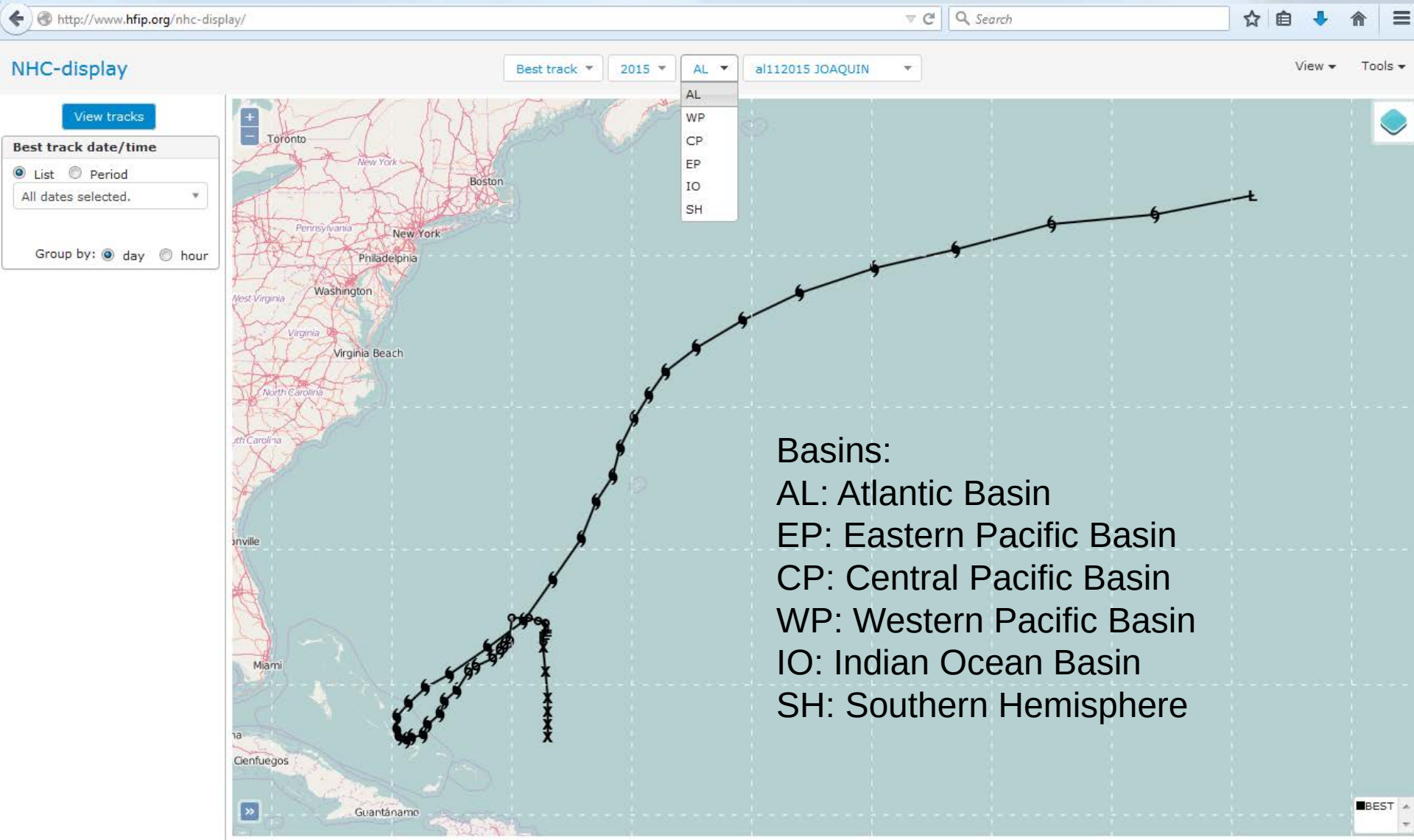
- **Developed a web-based display and diagnostic system to support NHC and for the hurricane community**
- **Display is designed using modular and flexible technology:**
  - OpenLayers Mapping tools
    - Platform independent, no license requirements
  - MySQL database
  - Primary input: ATCF files
- **Diagnostic evaluation tools**
- **Consensus forecasts**
- **Gridded Fields**
  - Sea Surface Temperature (SST)
- **Ongoing Development**
  - Gridded fields
    - Forecast products
    - Satellite observations
  - Additional Diagnostic Tools
- **Complement the ATCF display system and the HFIP products page**

Real-time access through the HFIP webpage:
- http://www.hfip.org/nhc-display/

Display System Overview



Display System Overview



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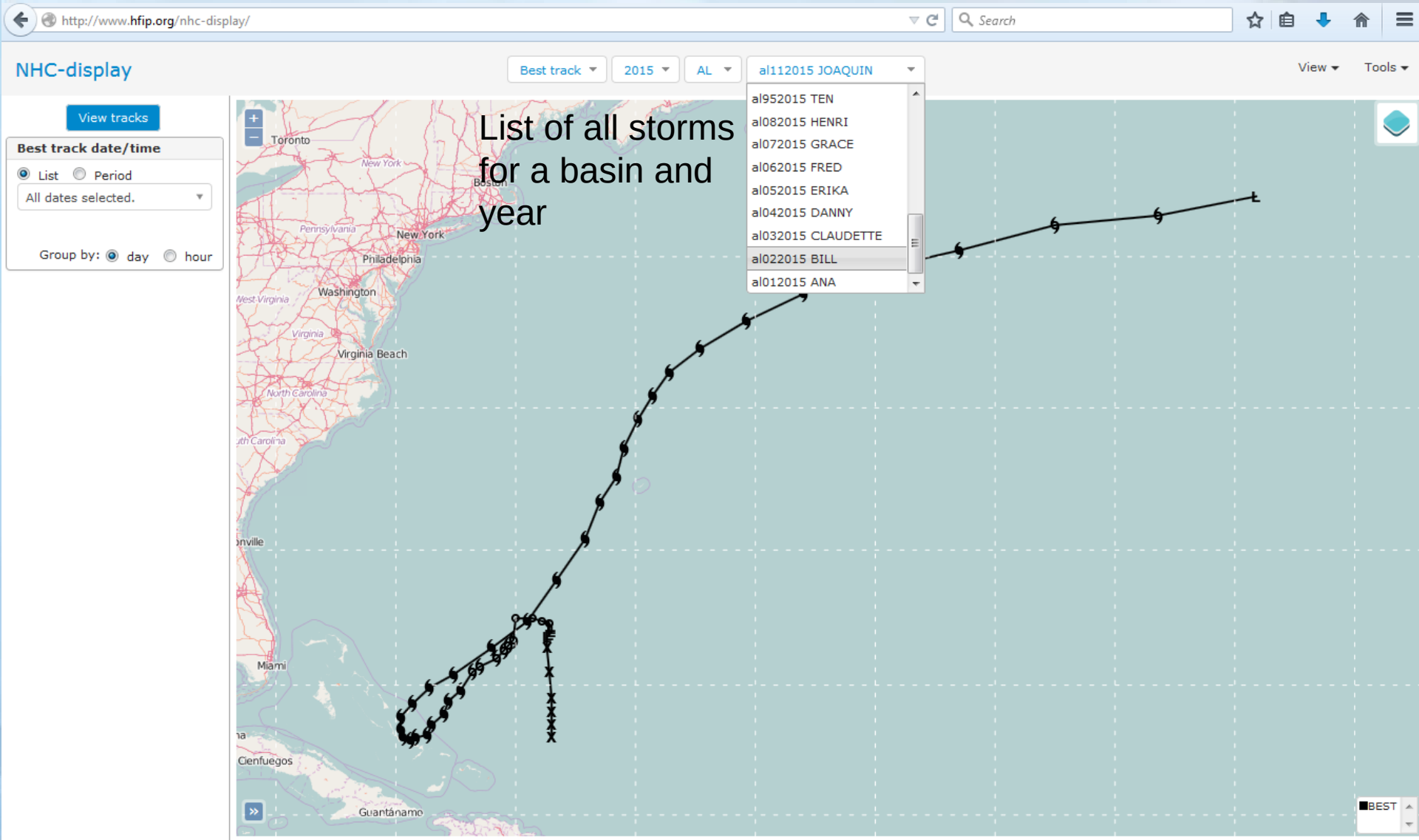

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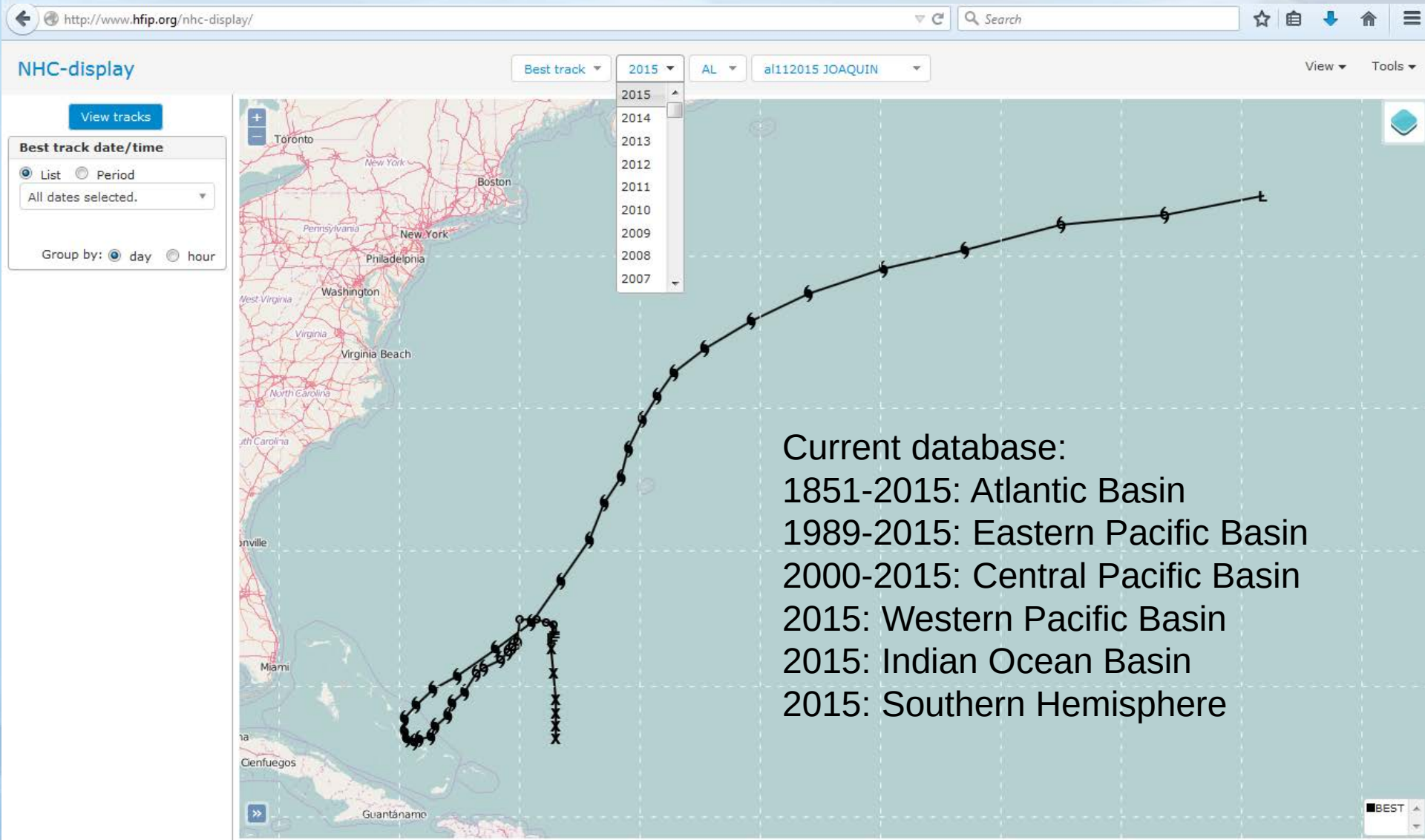
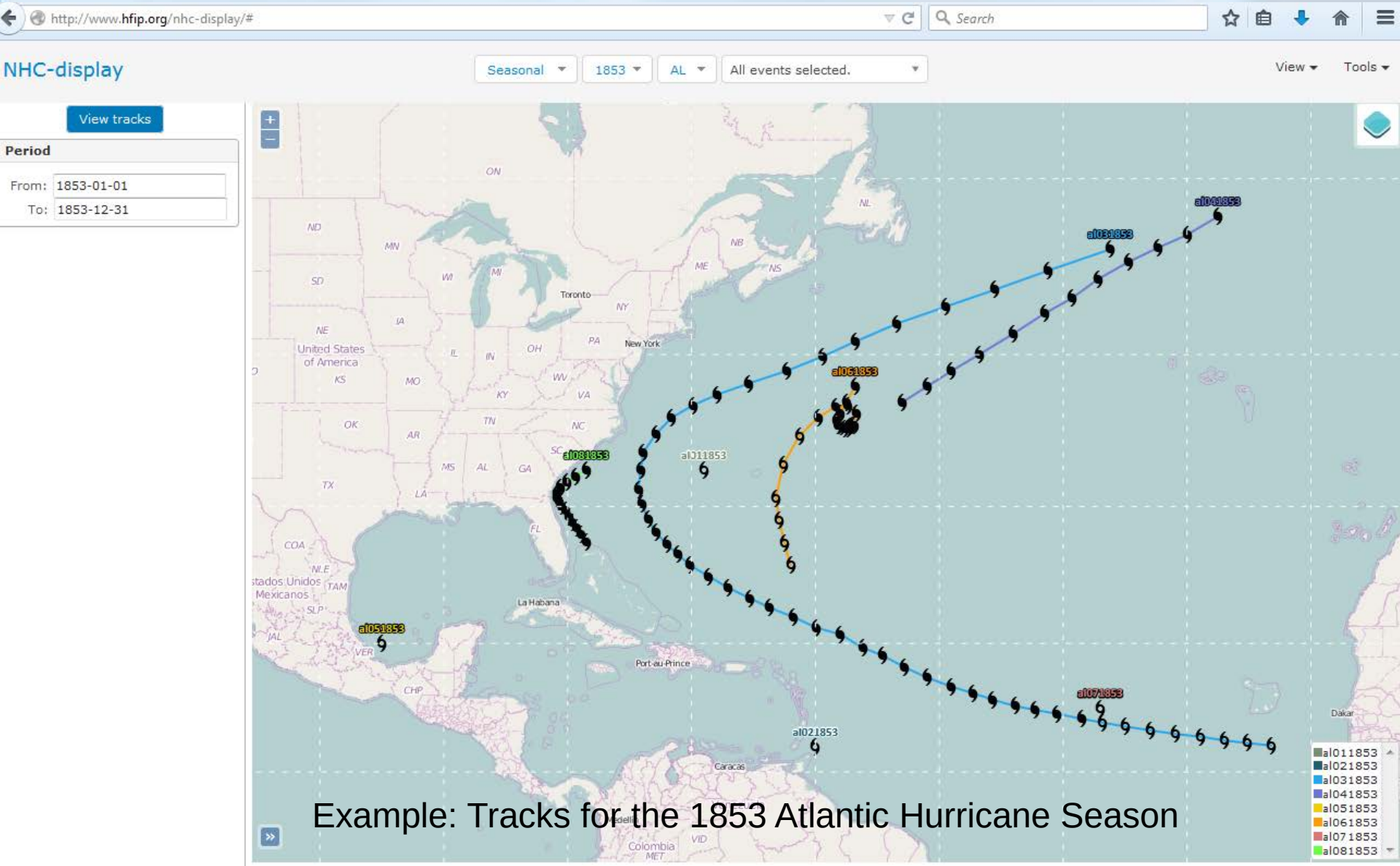
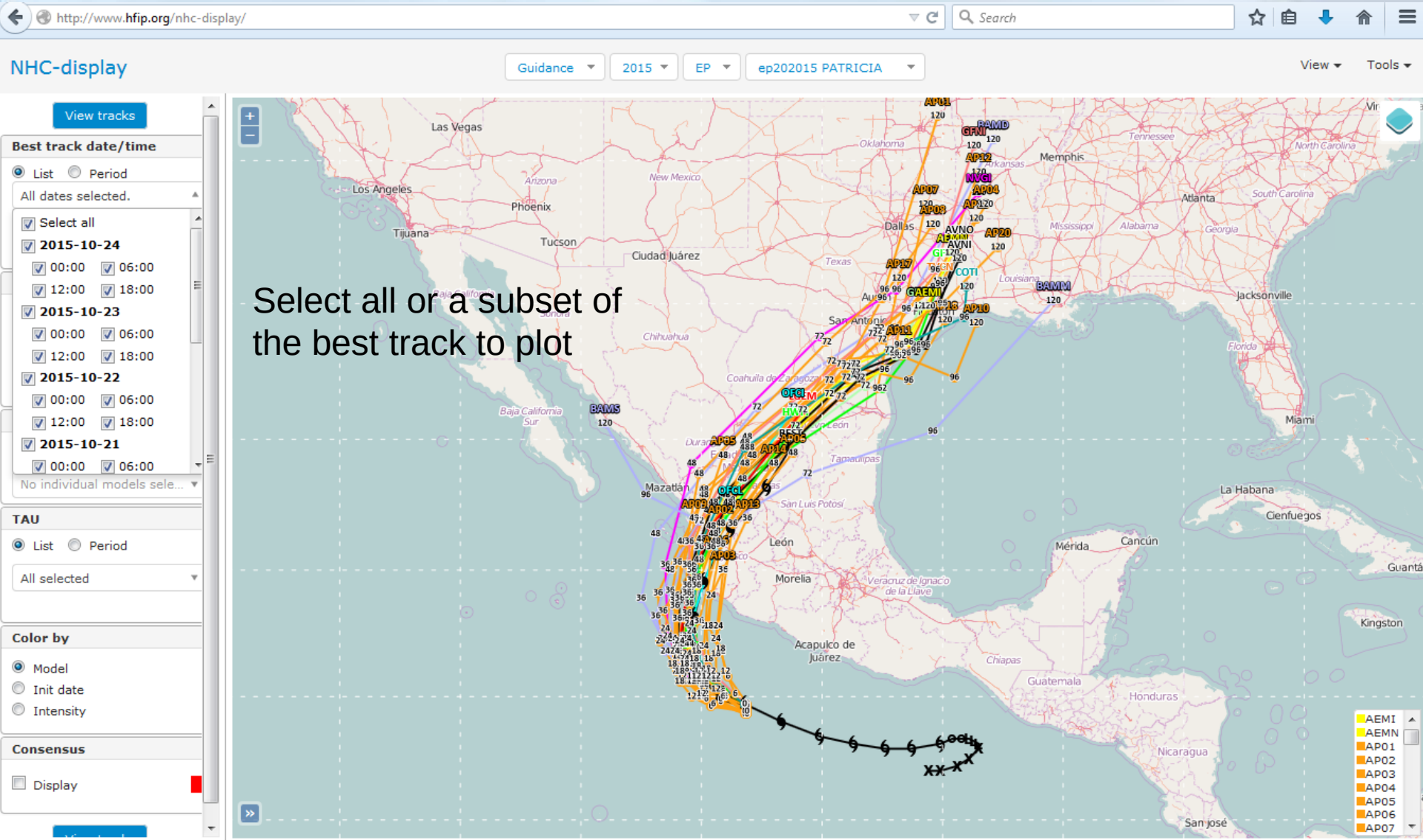


Seasonal Track Plotting

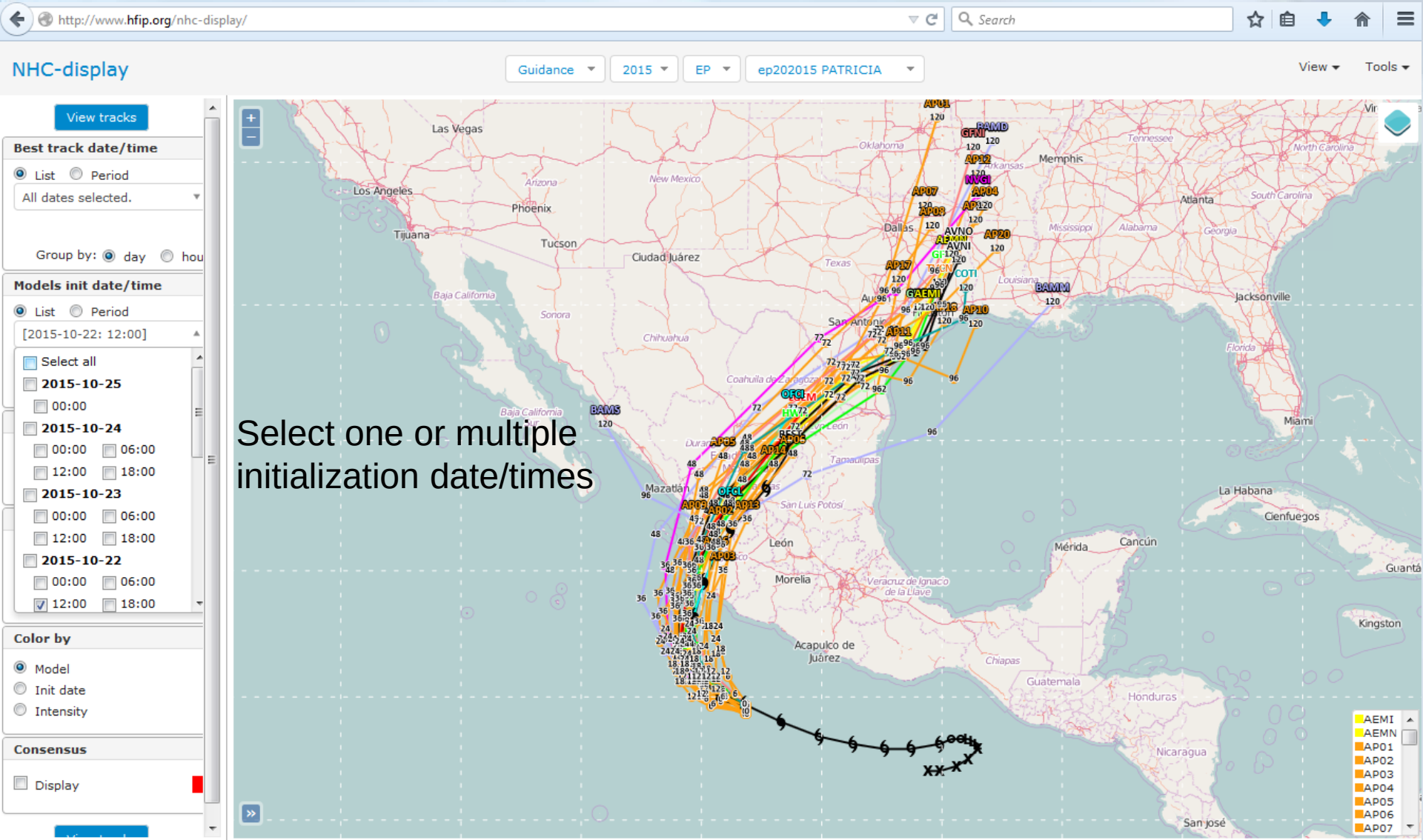


Example: Tracks for the 1853 Atlantic Hurricane Season

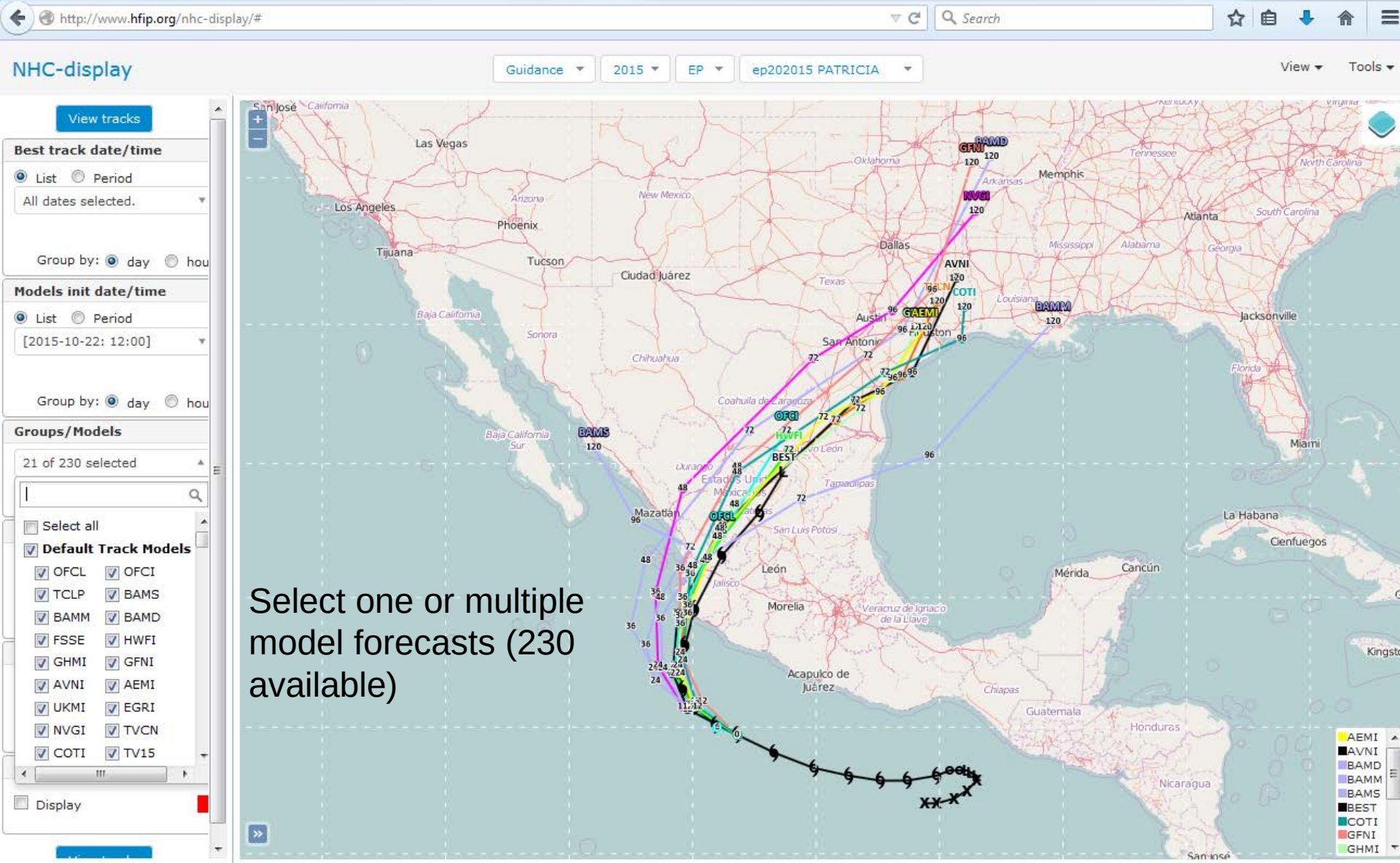
Forecast Guidance



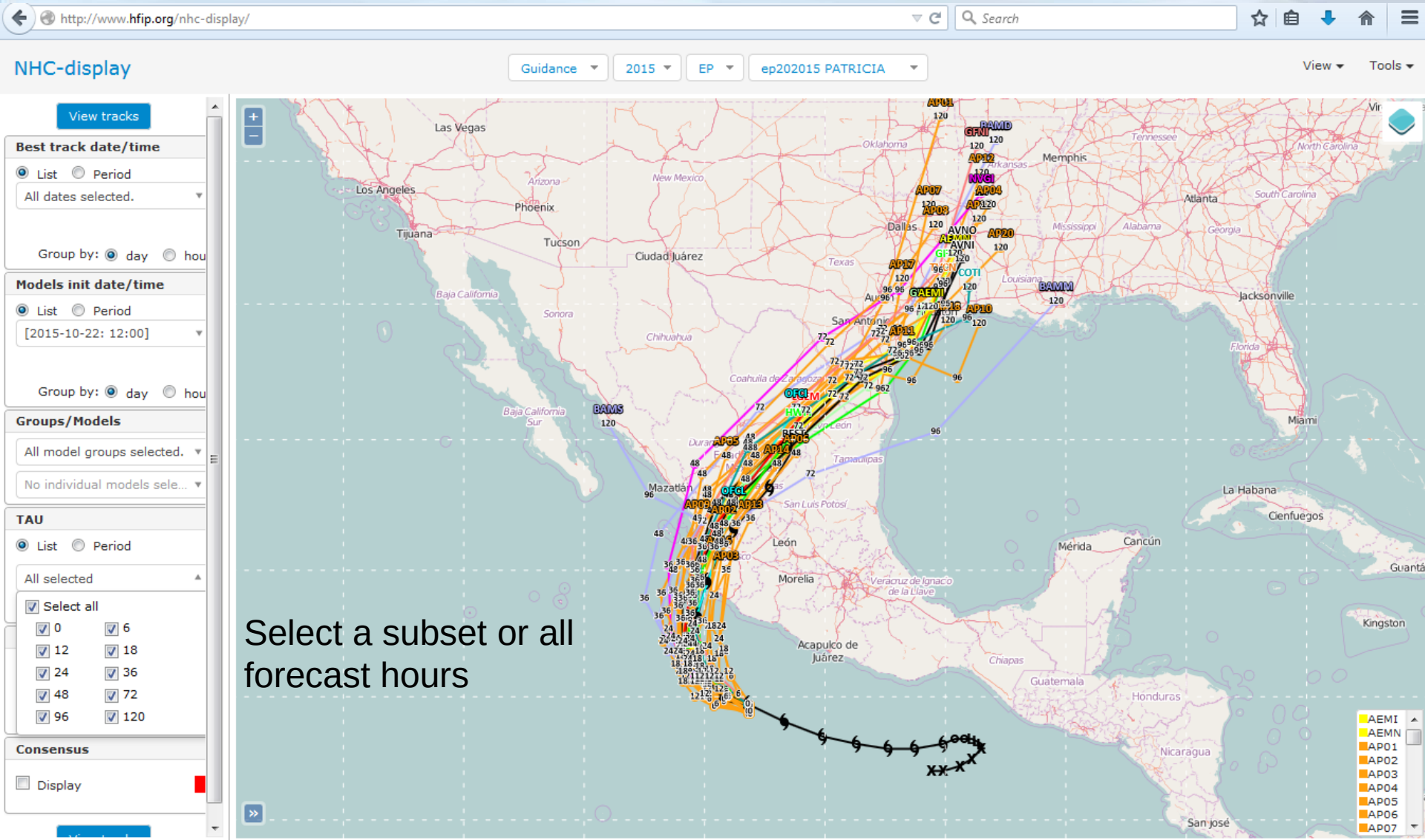
Forecast Guidance



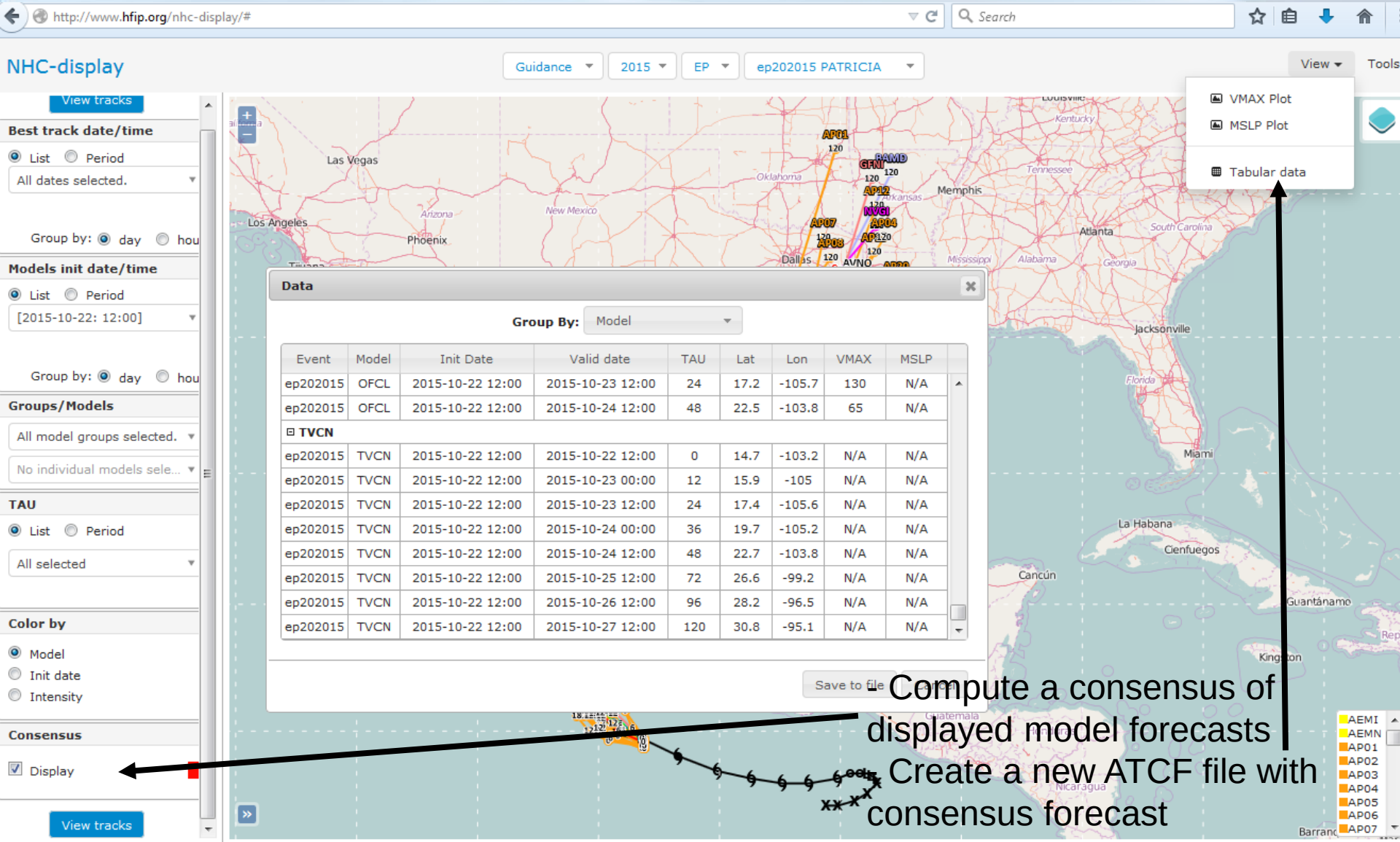
Forecast Guidance



Forecast Guidance



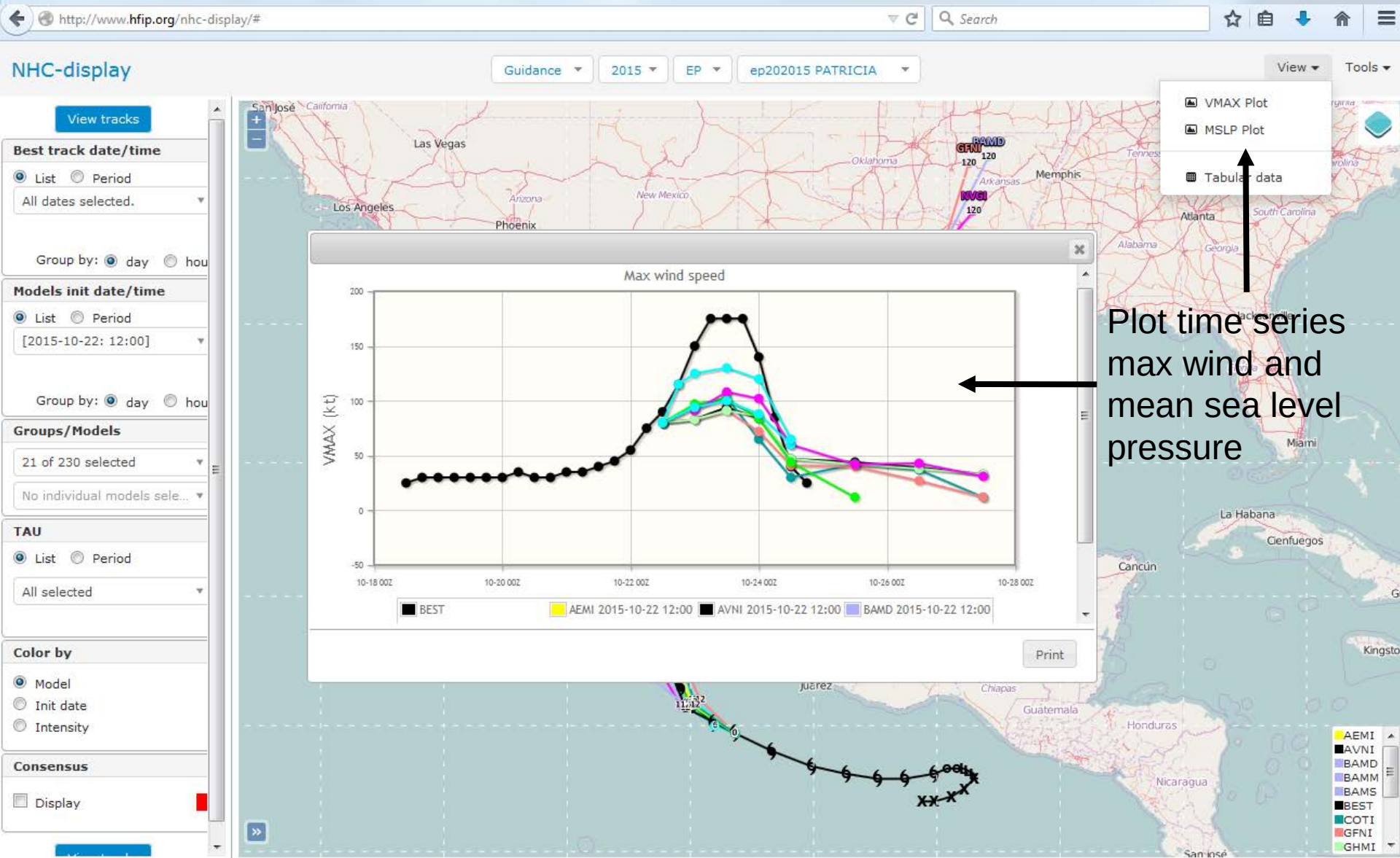
Consensus Forecasts



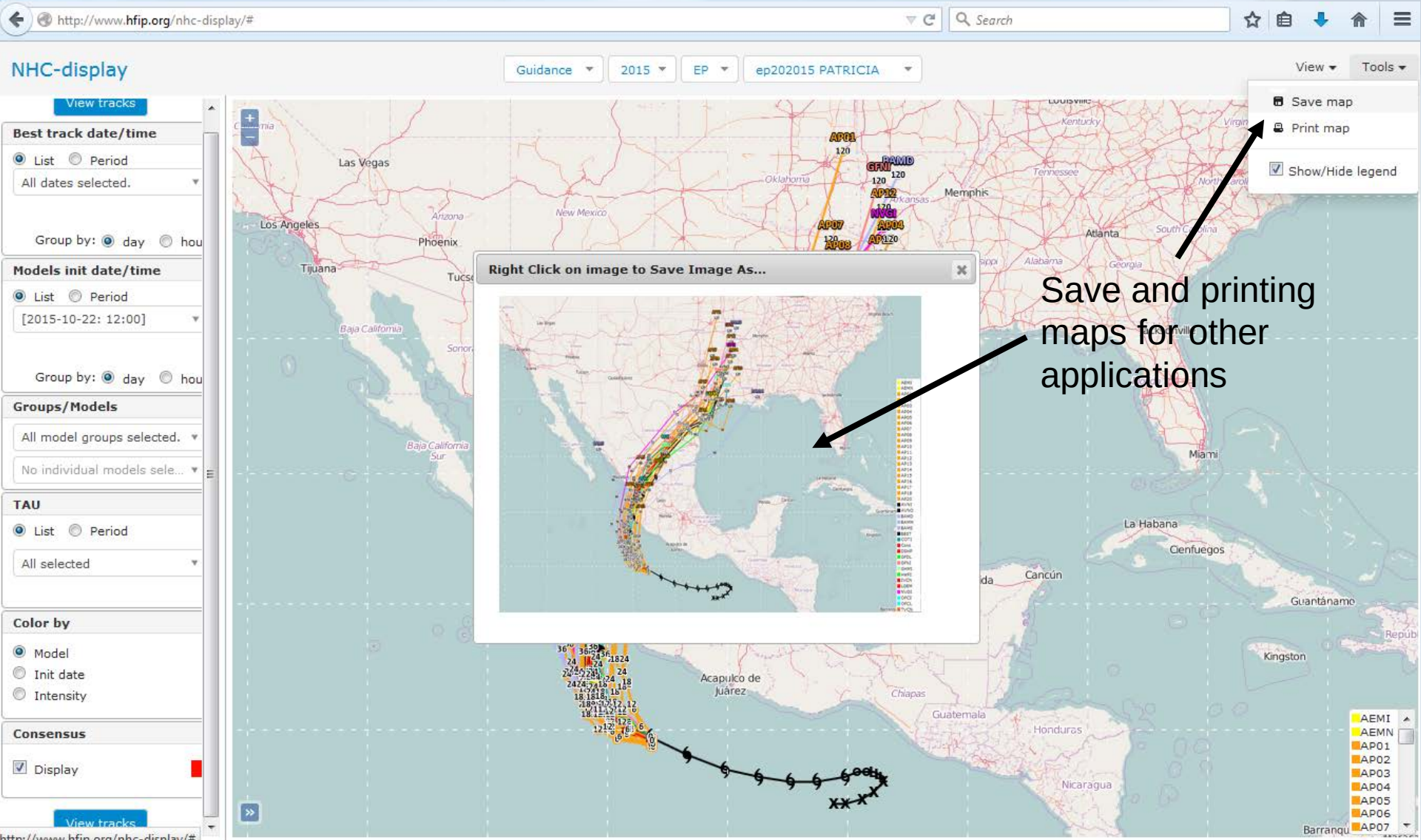
Compute a consensus of displayed model forecasts

Create a new ATCF file with consensus forecast

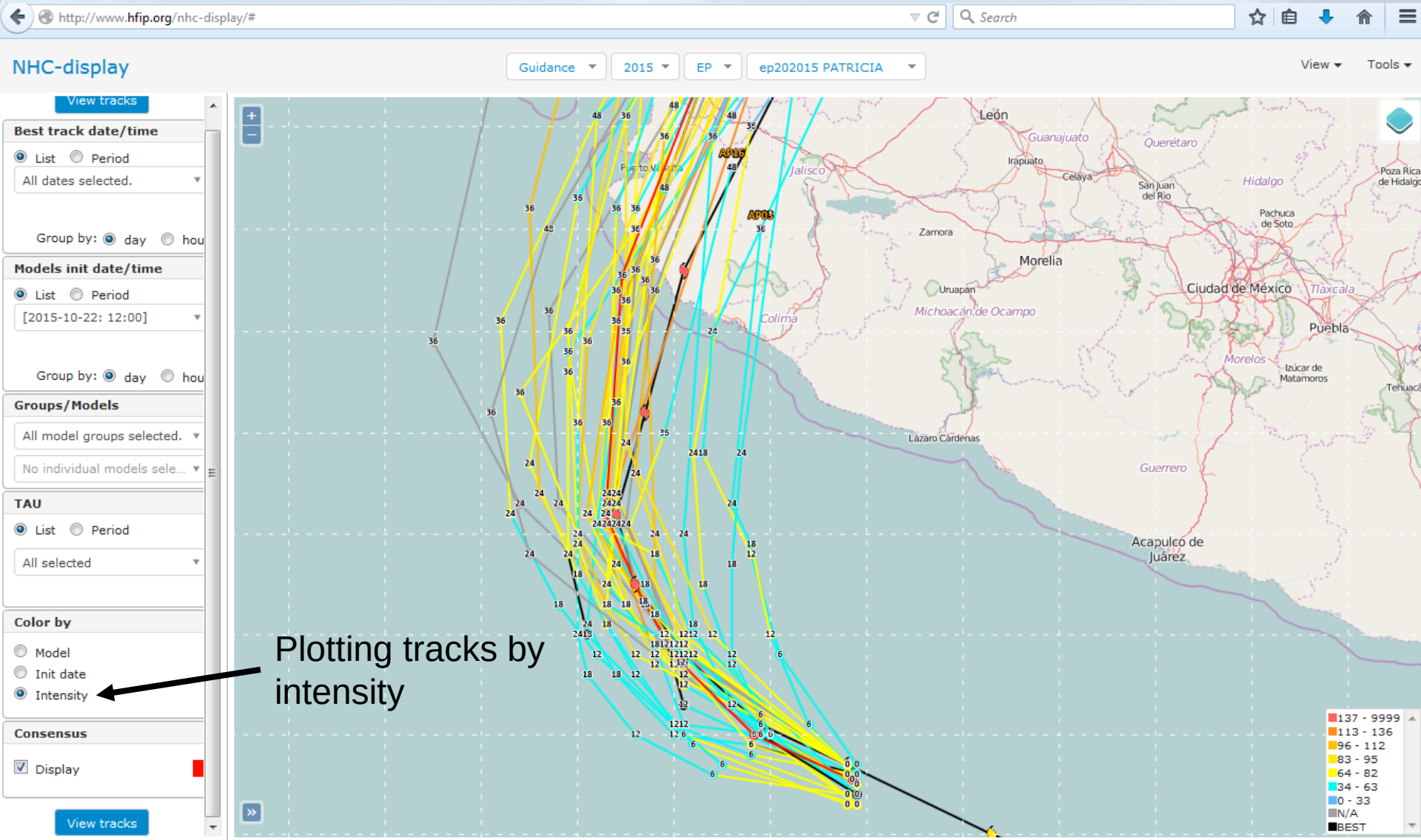
Time Series Plotting



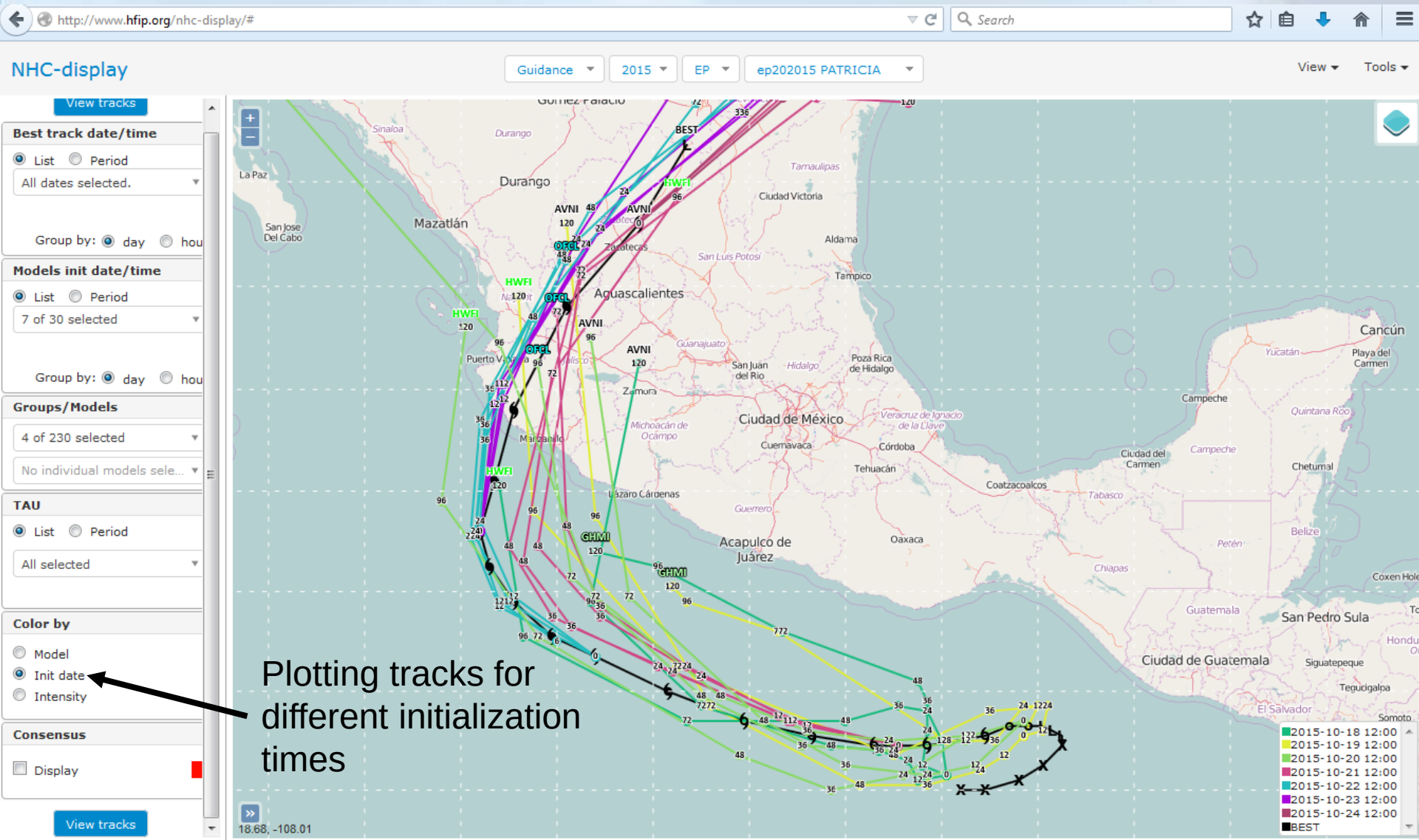
Save and Print Capabilities



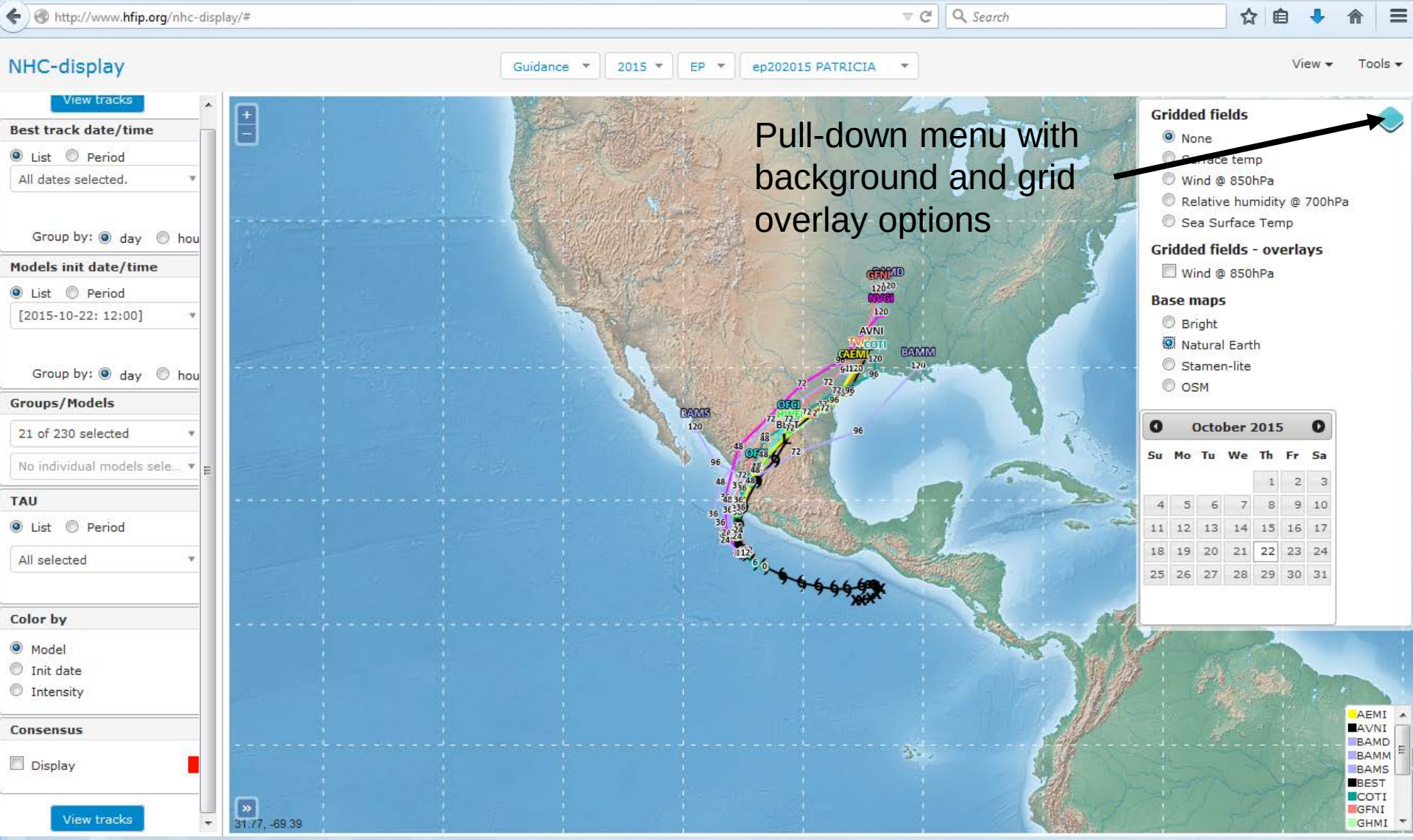
Diagnostic Evaluation - Intensity



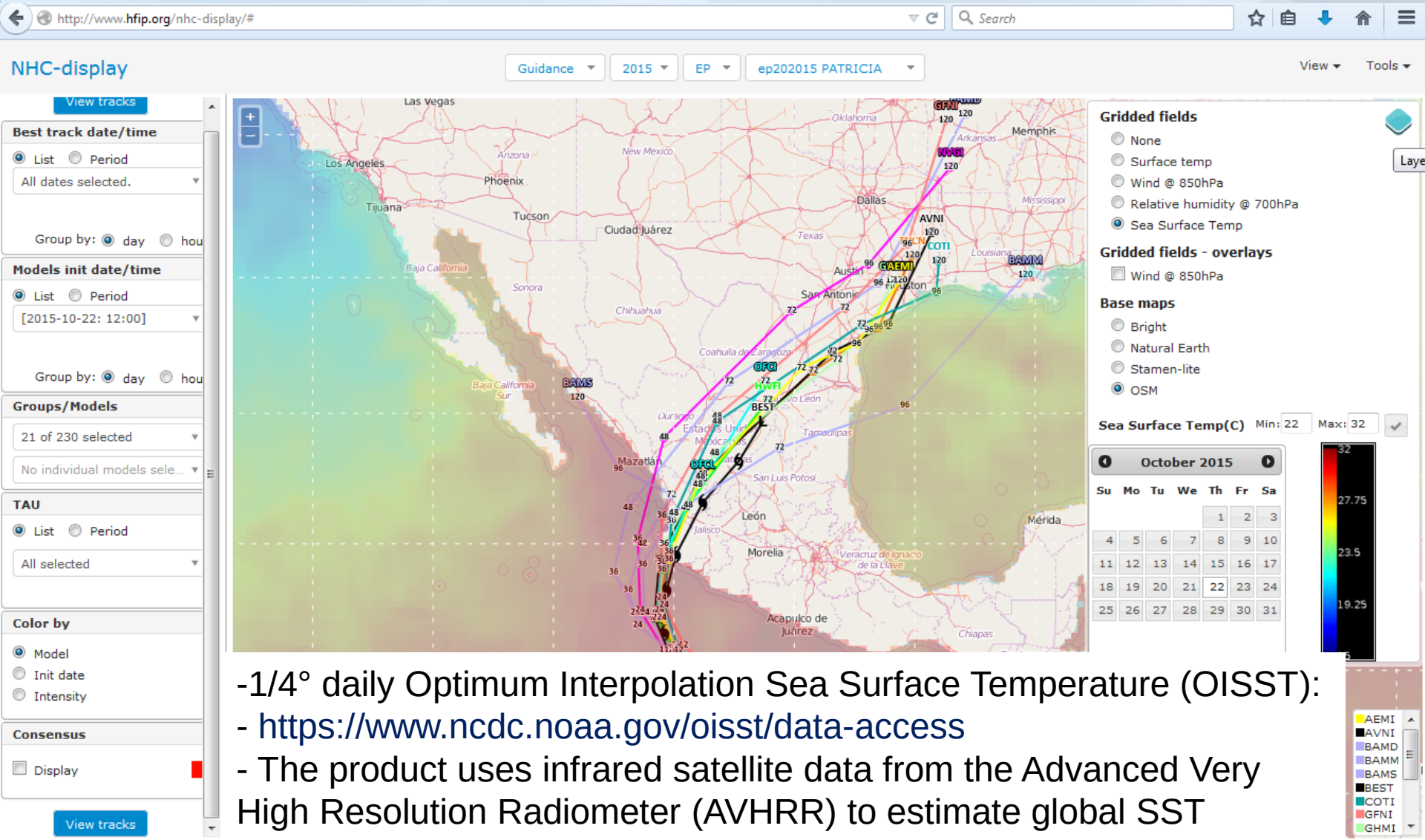
Diagnostic Evaluation – Init Time



Selectable Background Maps



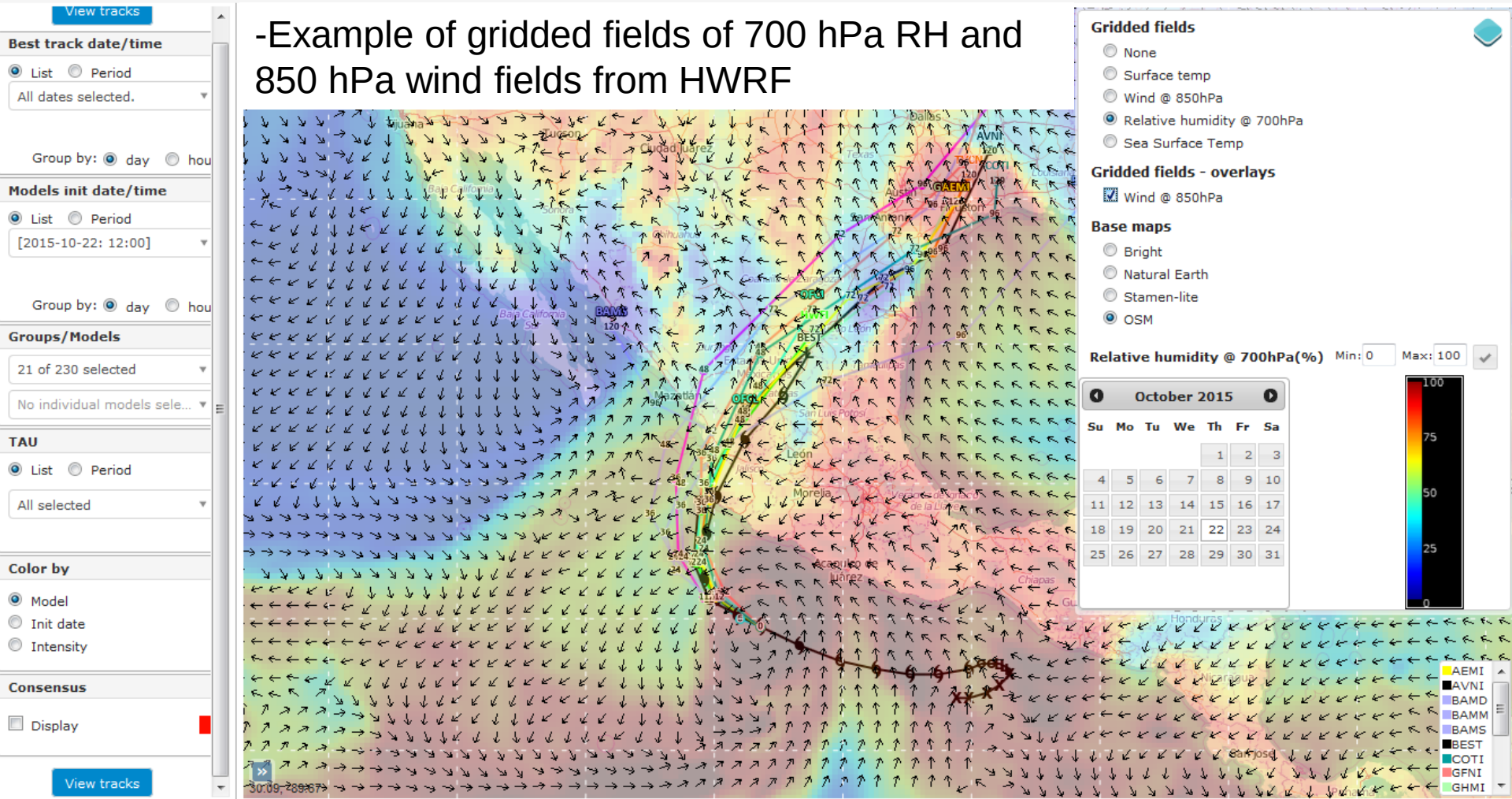
Current Gridded Product: Daily SST



-1/4° daily Optimum Interpolation Sea Surface Temperature (OISST):
- https://www.ncdc.noaa.gov/oisst/data-access
- The product uses infrared satellite data from the Advanced Very High Resolution Radiometer (AVHRR) to estimate global SST

Ongoing Development – Gridded Forecast and Satellite Products

-Example of gridded fields of 700 hPa RH and 850 hPa wind fields from HWRF



Summary

- **HFIP Website Support**
  - HFIP website development
  - HFIP software and systems support
  - HFIP Project Office support – group email lists and workshop coordination
- **HFIP Database Development**
  - Provides access to HFIP Tier1 and Diagnostic datasets
  - Available to the community **https://verif.rap.ucar.edu/repository**
- **HFIP Display and Diagnostic System**
  - Modular and adaptable web-based display framework
  - Available to the community: **http://www.hfip.org/nhc-display**
  - Provide a “live” demonstration of capabilities