ATCF Requirements, Intensity Consensus

Sea Heights Consistent with NHC Forecasts

(Progress Report)

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IHC 2010
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Tasks

1. NHC User Requirements for ATCF
2. Intensity Consensus Review and Update
3. Sea Heights Consistent with NHC Forecasts

1. User Requirements for ATCF

-Six and Seven Day Forecasting

  -Interpolator and consensus

  -Statistics

  -Forecast track display, dialog

  -Forecast intensity display, dialog

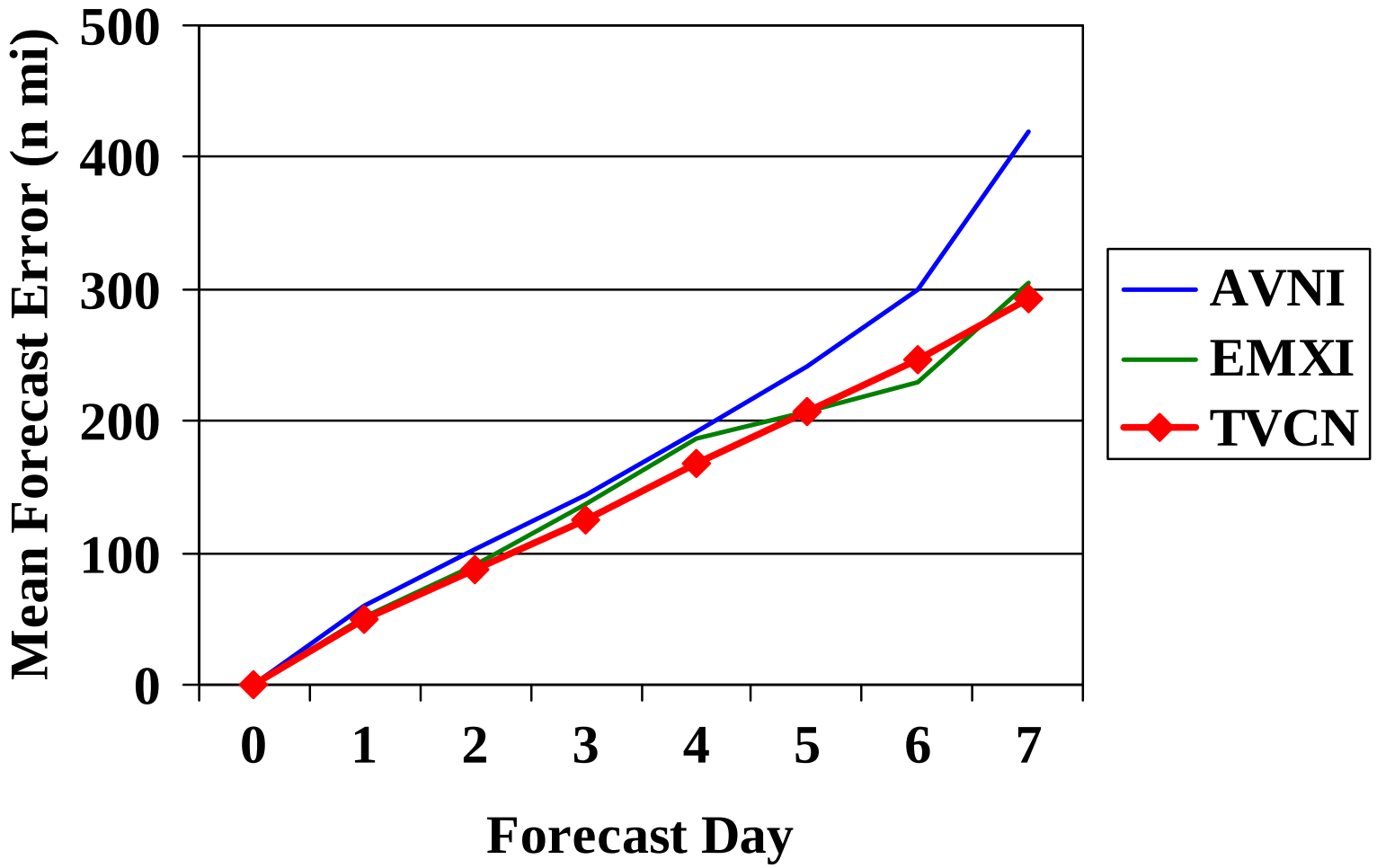
-Central Pacific GPCE

  -Based on western North Pacific coefficients

  -Need more data for evaluation

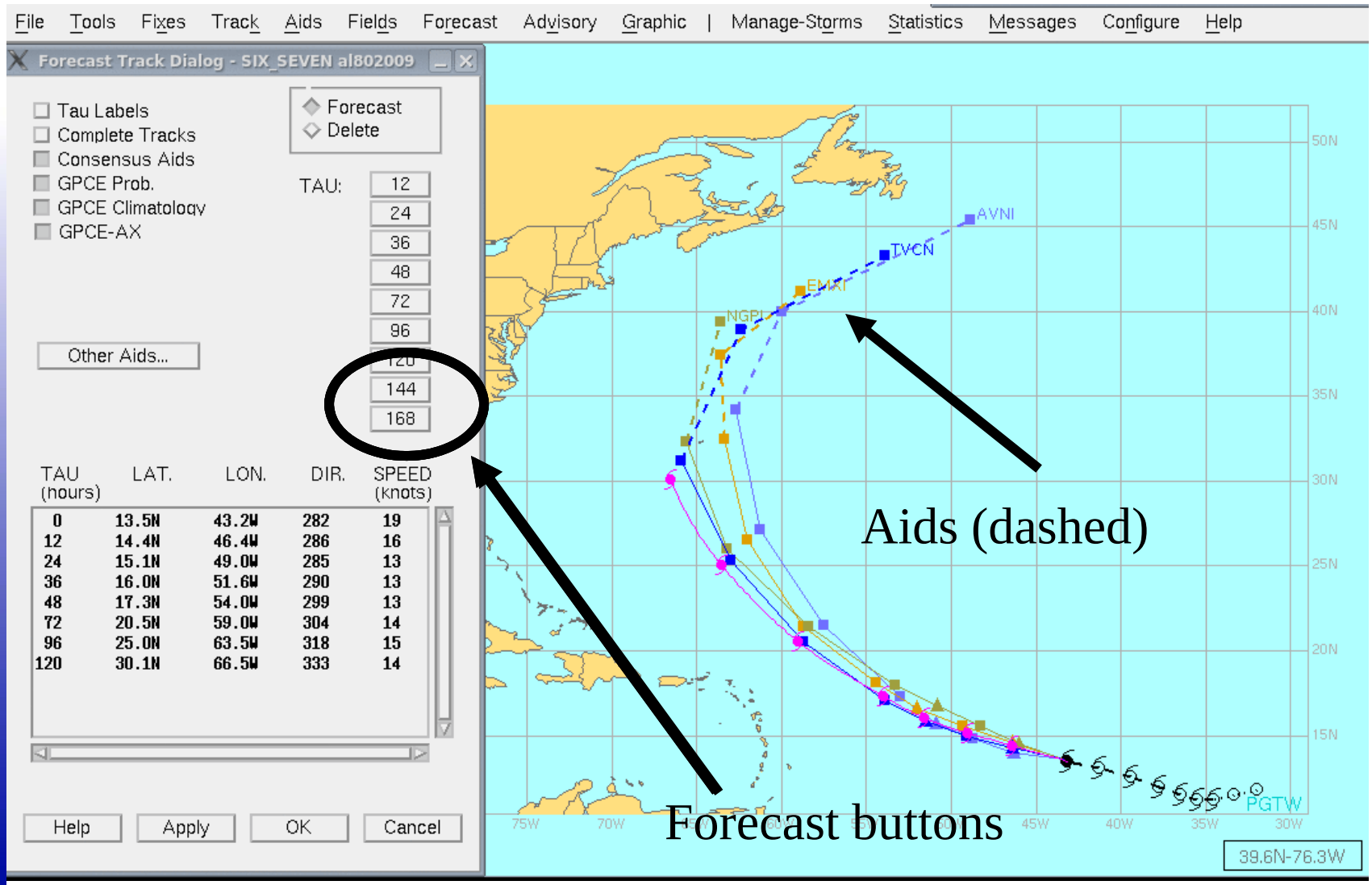
-GPCE-AX display

1. Six and Seven Day Forecasting Interpolator, Consensus and Statistics

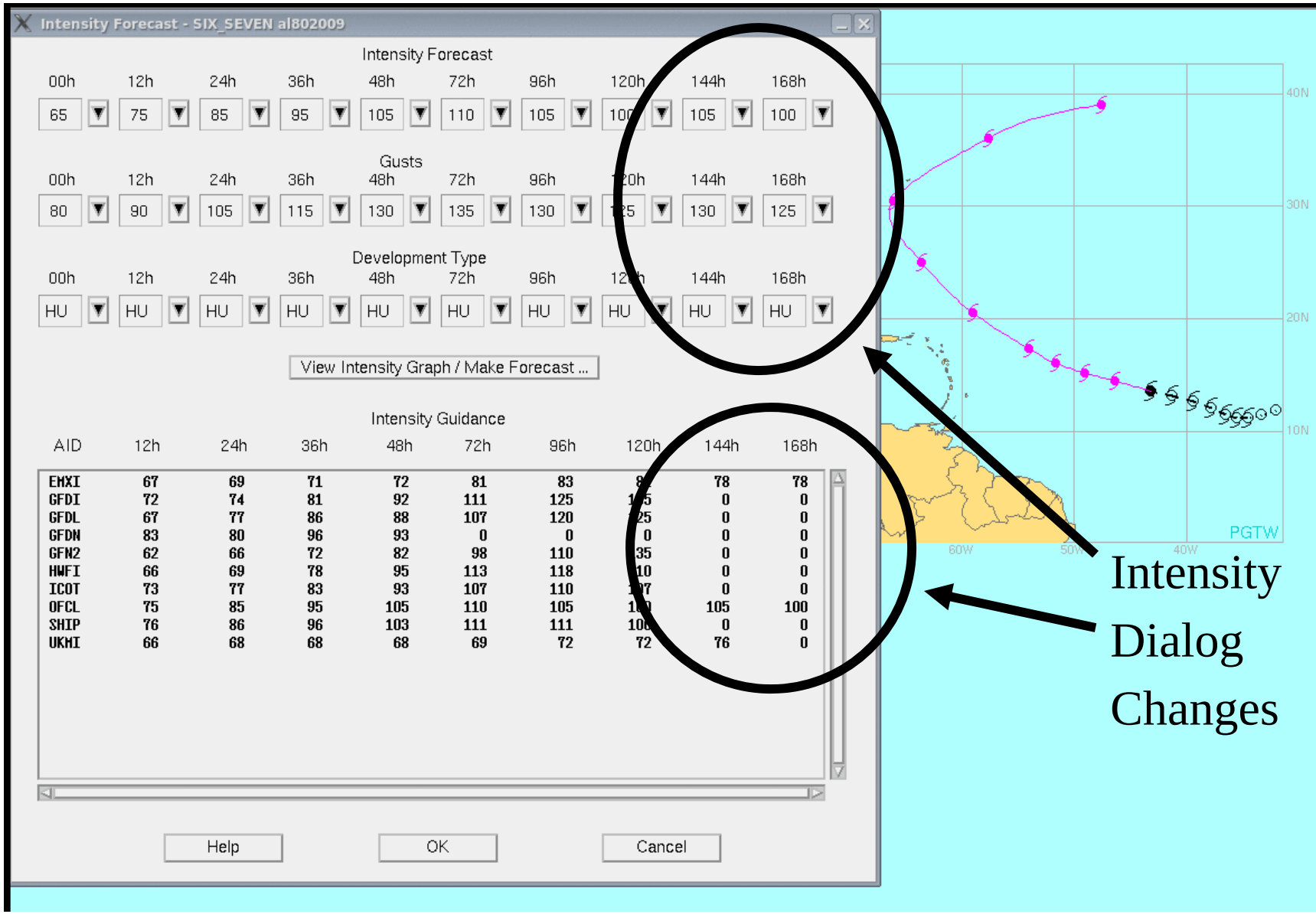


Error head-to-head with TVCN. 2007-2009 Atlantic seasons. Aids with more than 50 cases at day seven included.

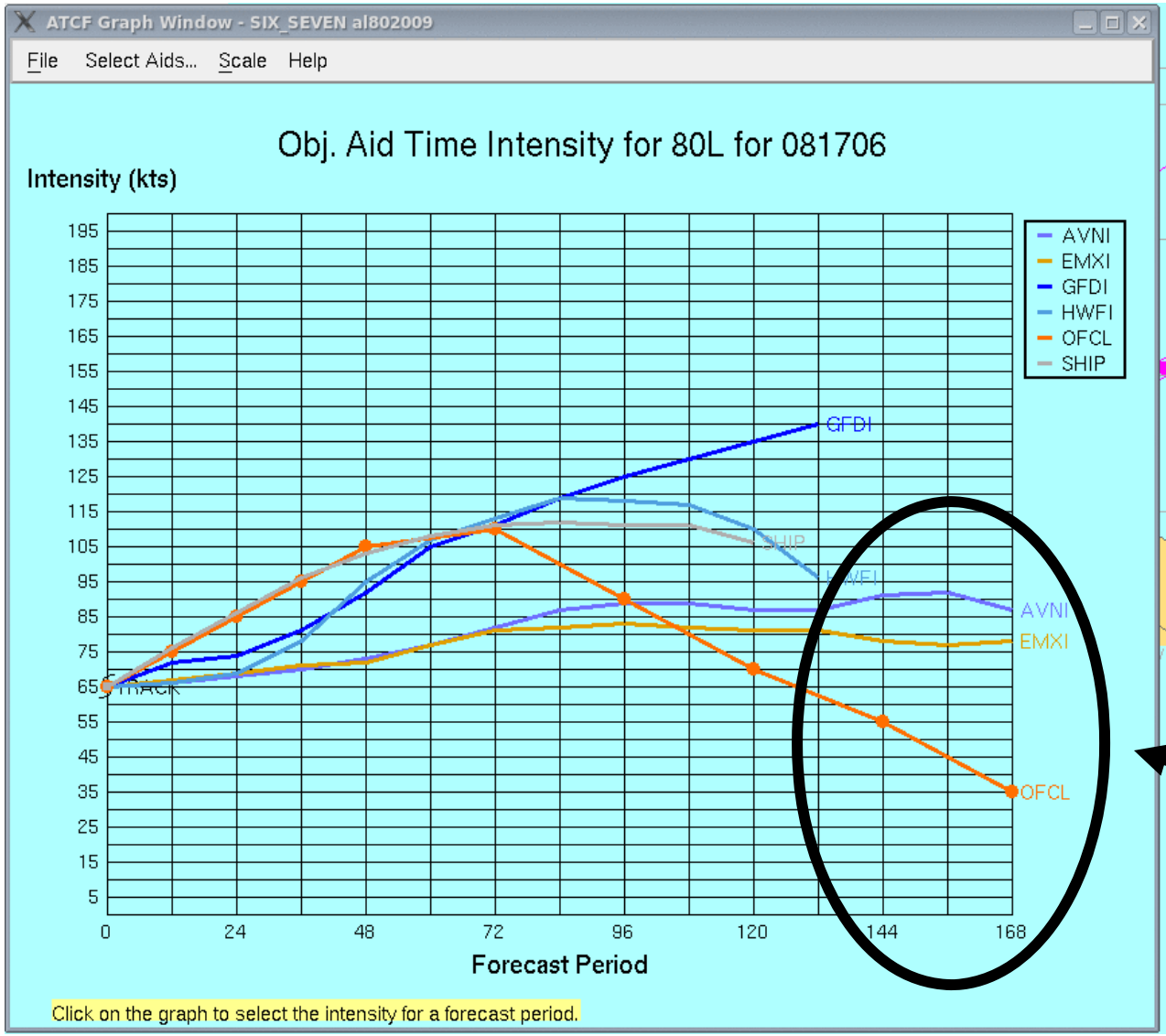
1. Six and Seven Day Forecasting Track Dialog

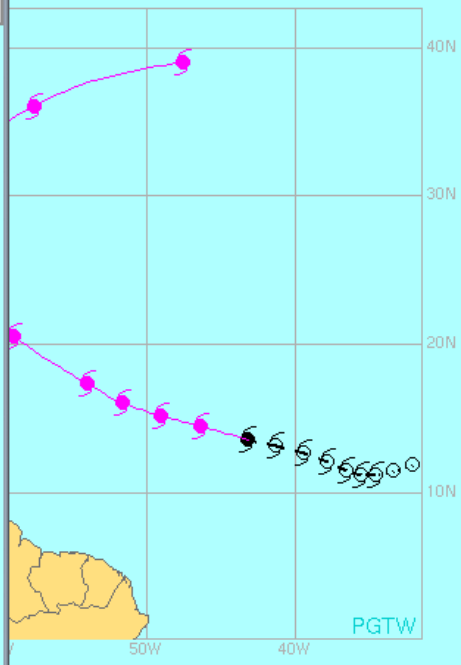


1. Six and Seven Day Forecasting Intensity Dialog



1. Six and Seven Day Forecasting Time-Intensity Graph





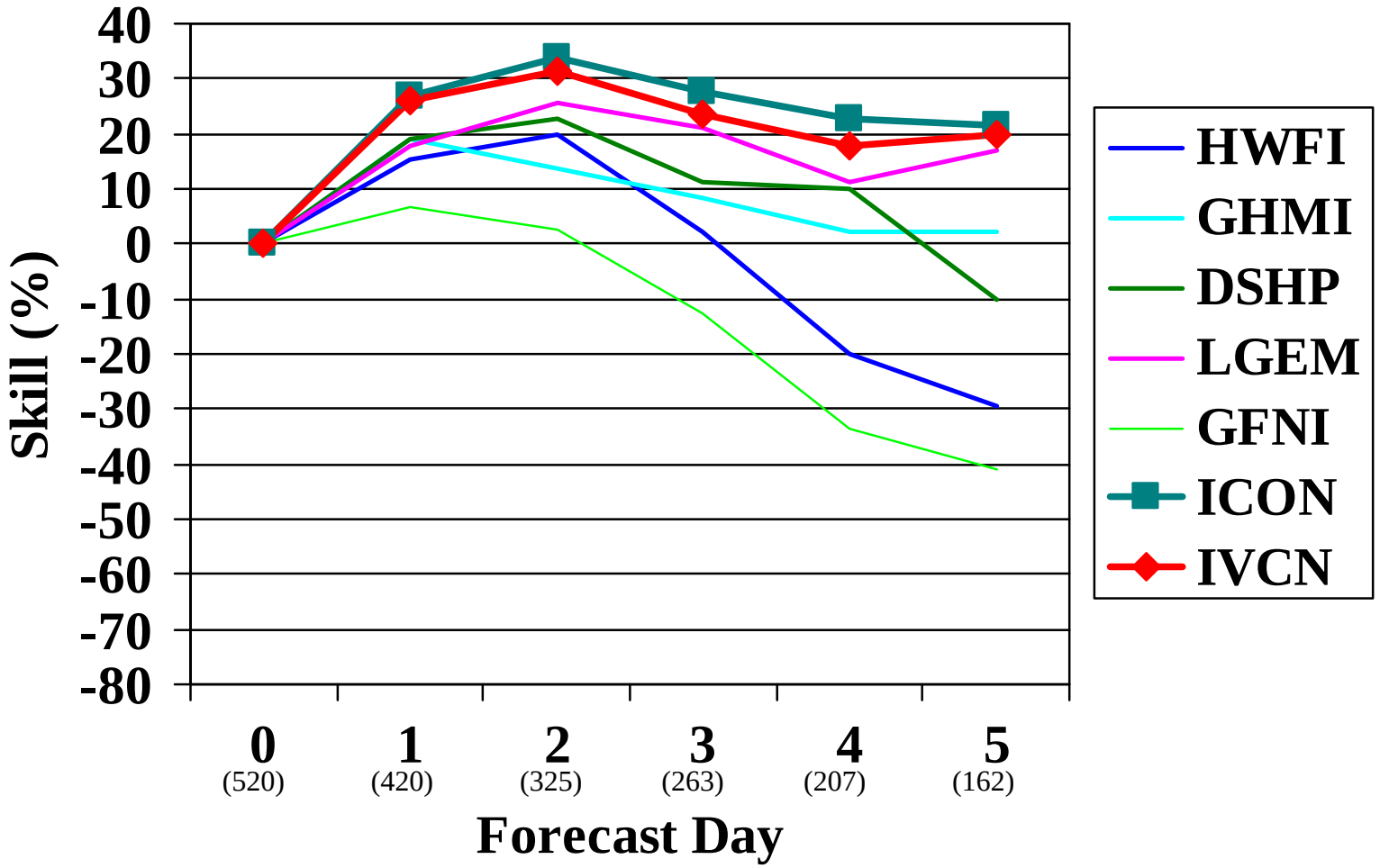
Time-Intensity Graph

Intensity Consensus Review and Update

- **Forecasts are all “early models”**
- **Consensus is average (equal weights) forecast**
- **ICON = DSHP+ LGEM + GHMI + HWFI**
  all must be present to compute
- **IVCN = DSHP+ LGEM + GHMI + HWFI + GFNI**
  two or more must be present to compute
- **Baselines for more complex methods**

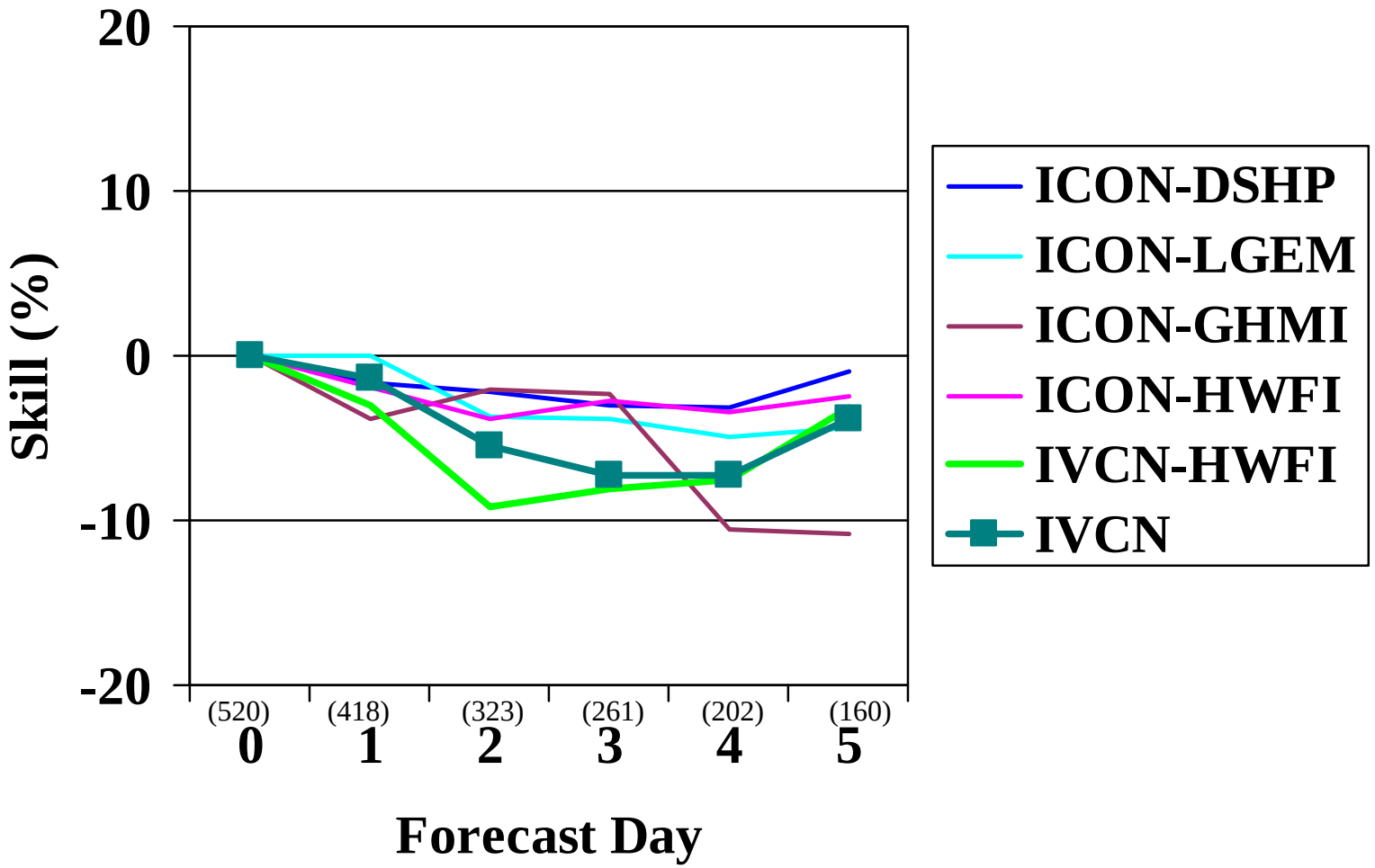
More info: Sampson, C. R., J. L. Franklin, J. L., J. A. Knaff and M. DeMaria, 2007: Experiments with a simple tropical cyclone intensity consensus. Wea. And Forecasting, 23, 304-312.

2008-2009 Atlantic Intensity Skill

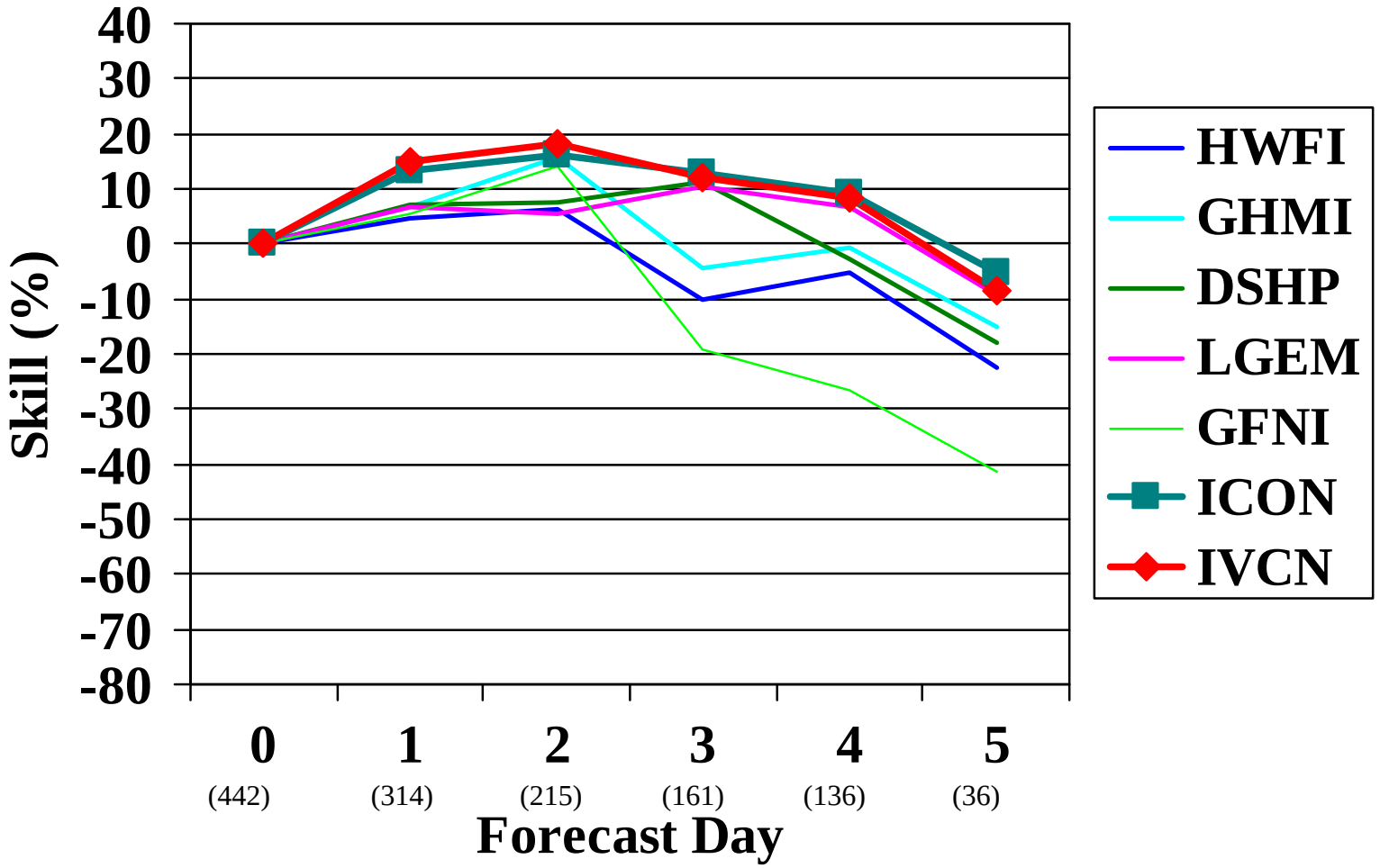


2008-2009 Atlantic Intensity Skill

Using ICON as Baseline

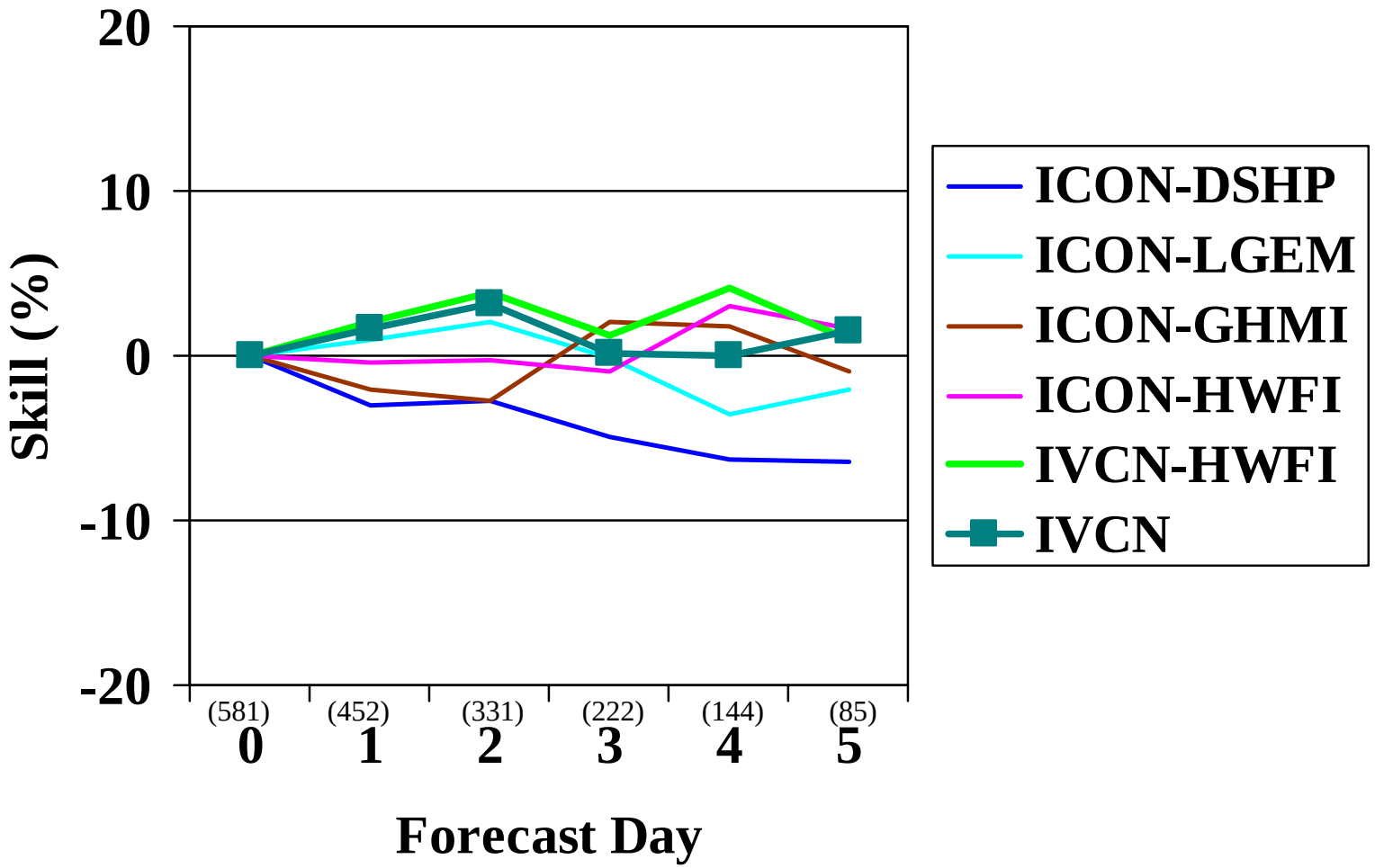


2008-2009 EastPac Intensity Skill



2008-2009 EastPac Intensity Skill

Using ICON as Baseline



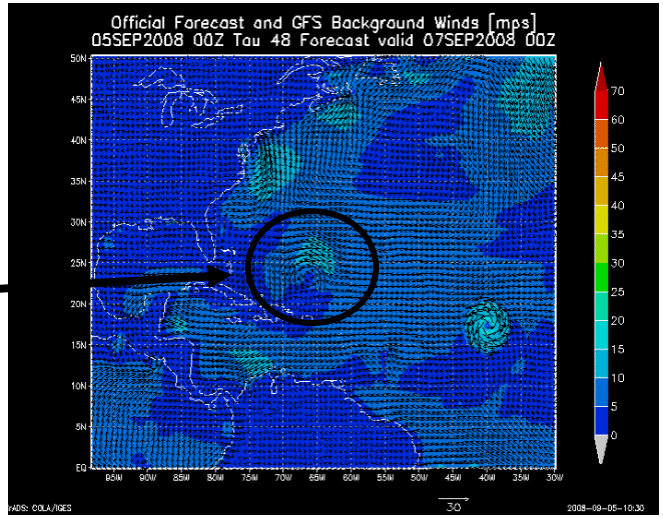
Intensity Consensus Summary

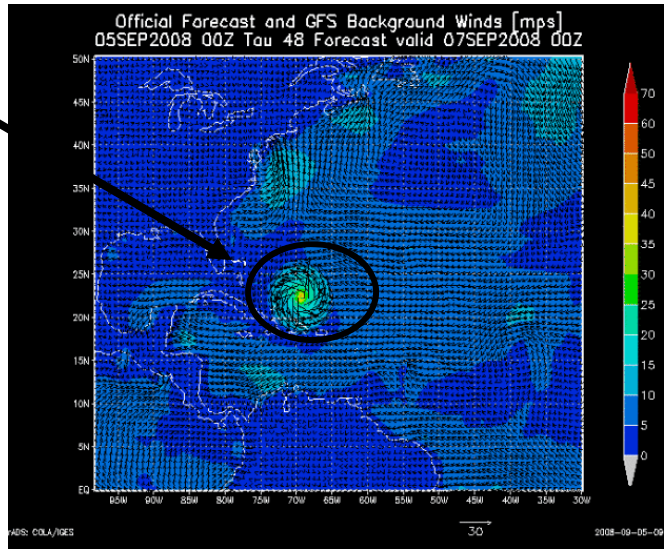
- ICON the top performer in Atlantic
- IVCN a top performer in Eastpac
- Other consensus aids within ~10% skill
- Consensus performance should improve as models are improved

3. Sea Heights Consistent with Official Forecast

Algorithm:

1. **Obtain GFS sfc winds**
2. **Cut out model vortex**
3. **Generate OFCL vortex**
4. **Insert OFCL in GFS sfc winds**
5. **Run WW3**
6. **Similar in concept to NAH WW3**





(Modified) Goals for 2010:

1. **Produce grib files for NAWIPS**
2. **Use 6-h old GFS run to reduce latency**
3. **Run real-time at NRL**
4. **ATCF output for 12-ft seas radii**

Progress Summary

1. NHC User Requirements for ATCF (40% complete)
2. Intensity Consensus Review and Update (50% complete)
3. Sea Heights Consistent with NHC Forecasts (20% complete)