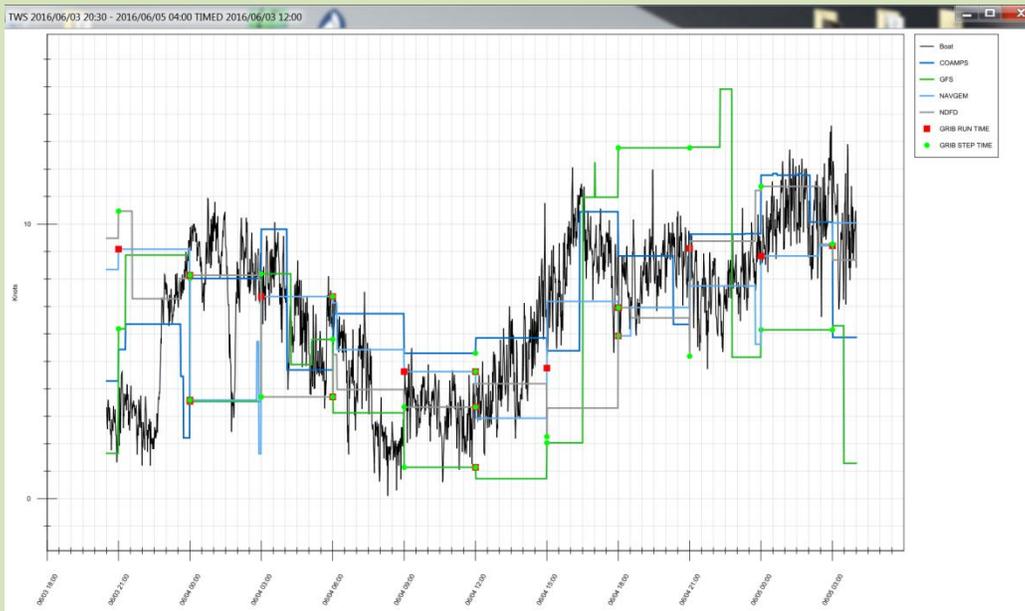


Model Accuracy: How to Understand the Analysis

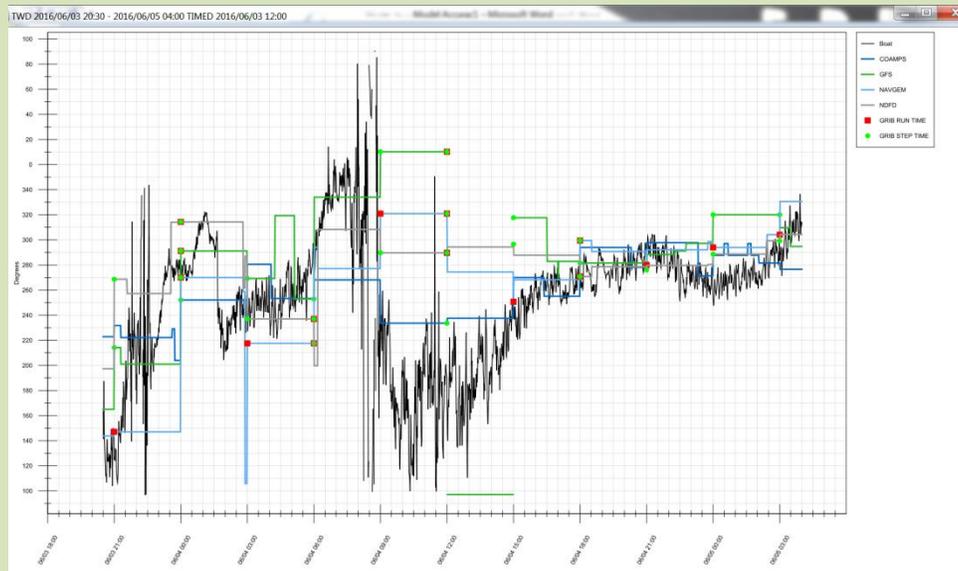
True Wind Speed (TWS) Graphical Plot: Allows user to visually track the forecasted accuracy of each GRIB vs the logged TWS captured by the instruments onboard. Each GRIB is color coded and the black line is the boat's TWS plot.



Red Circles: represent each “time step” inside the respective GRIB file. Example: 3 hr steps within the forecast

Green Squares: represent GRIB delivery times (when you got a new GRIB). This is most commonly every 6 hrs or 12 hrs.

True Wind Direction (TWD) Graphical Plot: is displayed as a rolling figure within the chart plot. The data frequently “rolls” from 001 degrees to 359 degrees and the plot must jump in given platform. This explains the often “jumps” in data displayed.



Red Circles: represent each “time step” inside the respective GRIB file. Example: 3 hr steps within the forecast

Green Squares: represent GRIB delivery times (when you got a new GRIB). This is most commonly every 6 hrs or 12 hrs.

Model Accuracy Results Page: provides the statistical analysis, trend errors, and overall GRIB file recommendation.

```
ModelAccuracy Results
TIMED mode with offset 00:00:00
Analysis start: 2016/06/03 20:30 Analysis end: 2016/06/05 04:00 Granularity: 00:01:00
COAMPS: Latest File:
COAMPS_04Jun16_1200z + 96 hrs.grb Updates 03:00 to 03:00 apart. Grib points 7.8 to 59.7 nm apart.
  TWS in knots : Corr'n 59%, RMS Err 2.4, AVG Err 0.7, 33% below @ -1.9, 67% above @ +2.0.
  TWD in degrees : Corr'n 64%, RMS Err 45.9, AVG Err 8.5, 36% below @ -35.1, 64% above @ +33.4.
  ERROR : 3.04

GFS: Latest File:
GFS_04Jun16_1800z + 96 hrs.grb Updates 03:00 to 03:00 apart. Grib points 13.0 to 60.1 nm apart.
  TWS in knots : Corr'n 36%, RMS Err 4.2, AVG Err -1.0, 61% below @ -3.7, 39% above @ +3.4.
  TWD in degrees : Corr'n 77%, RMS Err 68.7, AVG Err 2.0, 40% below @ -61.1, 60% above @ +43.7.
  BAR in bar : Corr'n 67%, RMS Err 5.5, AVG Err -5.4, 100% below @ -5.4, 0% above @ NaN.
  ERROR : 5.79

NAVGEM: Latest File:
NAVGEM_04Jun16_1800z + 96 hrs.grb Updates 03:00 to 03:00 apart. Grib points 26.5 to 60.1 nm apart.
  TWS in knots : Corr'n 34%, RMS Err 2.9, AVG Err -0.2, 56% below @ -2.2, 44% above @ +2.3.
  TWD in degrees : Corr'n 54%, RMS Err 65.8, AVG Err 8.0, 38% below @ -53.0, 62% above @ +45.3.
  BAR in bar : Corr'n 71%, RMS Err 6.2, AVG Err -6.1, 100% below @ -6.1, 0% above @ NaN.
  ERROR : 3.93

NDFD: Latest File:
NDFD_03Jun16_1800z + 72 hrs.grb Updates 03:00 to 03:00 apart. Grib points 26.0 to 30.1 nm apart.
  TWS in knots : Corr'n 45%, RMS Err 2.9, AVG Err -0.4, 56% below @ -2.3, 44% above @ +2.0.
  TWD in degrees : Corr'n 54%, RMS Err 60.8, AVG Err 27.9, 30% below @ -26.5, 70% above @ +51.1.
  ERROR : 3.93

ModelAccuracy recommends COAMPS, with a score of 3.04
```

Correlation: tells you if the GRIB prediction followed the boat's LOG data in parallel.

Example: if the TWS was predicted to increase and the boat data did in fact increase the correlation will be high. HIGH is good.

RMS Error: LOW is good. "Above's" and "Below's" do not cancel each other out! This is the most accurate error measure, taking into account how much time the prediction spent not aligning with the boat data.

Average Error: LOW is good. This is the simple comparison if you averaged all the TWS predicted by the GRIB file to the TWS logged on the boat which was also averaged into one single number and compared. In theory here you can have a prediction with TWS way above and then way below but then averages to the exact average number of the boat data and have a "0.0 knots Average error." "Above's" and "Below's" do cancel each other out in this analysis!

% Below % Above: Counts the number of times the GRIB prediction is above/below the boat log data, and forms a % of how often it is above/below the boat data line and how inaccurate it is when above and below the boat data line.

RMS Error is the most important number in determining the accuracy of a GRIB file.