

JHT Project Supplemental Information as of January 2006
Developing an Inner-Core SST Cooling Predictor for use in SHIPS
August 1, 2003-August 1, 2005

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This project was to develop an empirical method for estimating the actual SST in the inner core of a tropical cyclone, which could then be used to adjust the SST in the SHIPS model. A version of the algorithm that depended on the pre-storm SST, latitude and storm translational speed was developed and tested in SHIPS. Figure 1 shows that the inclusion of the SST improved the fit of the SHIPS model by 1 to 3% for the dependent sample of cases from 1982 to 2004. The SHIPS model forecasts were re-run in the post season under operational conditions with and without the SST cooling for all cases from the 2003 and 2004 seasons. The impact on the 2003 season was neutral, but there was a significant positive impact for the 2004 season, as can be seen in Fig. 1.

Because of the positive results for the dependent sample and for the 2004 season re-runs, a decision was made to include the SST cooling in the operational Atlantic SHIPS forecasts during the 2005 season. This decision was made after consultation with TPC forecasters in May of 2005. In order to determine the impact of the inclusion of the SST cooling in the real time runs during 2005, the SHIPS forecasts were re-run in the post-season with the SST cooling removed (with purely operational input, and coefficients developed without the SST cooling). The errors from these forecasts were then compared with the real-time forecasts with the SST cooling. Figure 1 shows that the SST cooling improved the SHIPS forecasts by 2 to 5% at 24-120 hours. Thus, in hindsight, the decision to include the SST cooling in the real time runs was the correct choice. Based upon the real-time runs from 2005, the re-runs from 2004, and the impact on the dependent sample, the project PIs and Co-PIs suggestion would be to make the SST cooling operational for 2006. This algorithm was only developed for the Atlantic, and would only be implemented in that version of SHIPS.

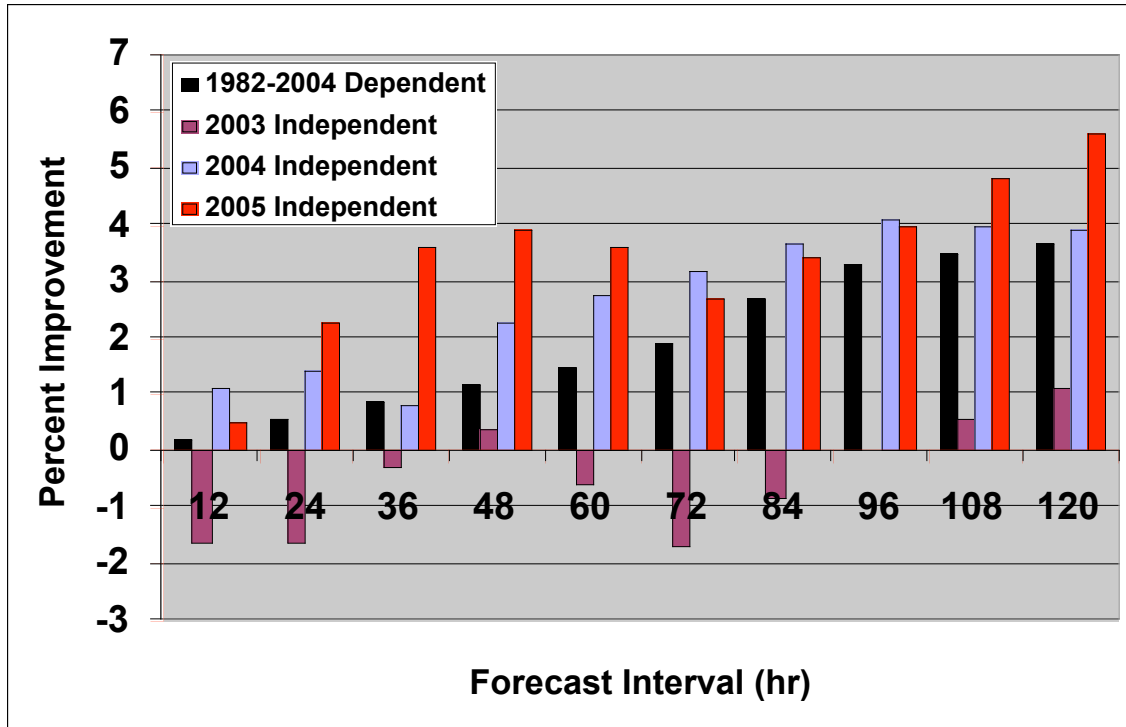


Figure 1. The percent improvement (reduction in average intensity error) due to the inclusion of the SST cooling algorithm in the SHIPS model.