

Quarterly Report ending 15 April, 2002

An Operational Five Day Tropical Cyclone Track Forecasting System

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During the recent quarter, only slow progress toward making the ensemble operational has occurred. This is mainly due to the unforeseen difficulty of converting the code for use on the National Centers for Environmental Prediction operational computer. Most of the steps necessary for progress in this regard are in place, and work will soon commence. The following tasks have been completed:

1. The VBAR ensemble has been run twice daily on one storm in near real time, and simple track graphics and the atcf files have been presented to the NHC hurricane specialists during the 2001 hurricane season.

2. The beginnings of a probabilistic strike potential based on this ensemble will be available shortly.

3. A unified targeting and data assimilation technique, the ensemble transform Kalman Filter, is in testing phase.

Much work remains in presenting the full potential of this system.

1. Three items will be pursued in the coming year:

- A. The code must be converted to run on the NCEP IBM computer. The investigator has worked with IBM and NCEP on this problem, made difficult by not being co-located with NCEP. Steps have been taken to improve communications between HRD and the IBM so that the full suite of useful debugging tools will be available at AOML. Once this process is complete, the code conversion can continue. Time estimate: 10 weeks.

- B. The real time presentation of the ensemble forecasts must be developed, entailing work with operational people at NCEP and NHC. Time estimate: 2 weeks, excluding work of operational people at NHC and NCEP.

C. Once the code conversion is complete, the ensemble should be converted from a twice-per-day system to a four-times-per-day system. Time estimate: 2 weeks.

D. The ultimate step is to transform the system to run on every tropical cyclone of interest, not just the current one. This will probably be completed in year three.

2. The probabilistic system must be finalized and kept updated with fresh results. Time estimate: 4 weeks.

3. Work on the ETKF must proceed, in tandem with the JHT targeting work. Time estimate: 5 weeks.