

Progress report on the CFCAS supplementary project

**Transitioning GOAPP
Research to Operations:
Real-Time Data Assimilation and
Forecast Systems**

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Overall Objective

Optimization, evaluation and technology transfer of new ocean and atmospheric data assimilation schemes and models for operational use.

Two Projects

- ❑ Real-Time System for Forecasting Mesoscale Variability of the North Atlantic.
- ❑ Real-Time Global Coupled Atmosphere-Ocean System – a transition to operations.

Evaluation and Implementation

Two new pre-operational systems to be evaluated for possible implementation through collaboration with CONCEPTS.

Real-Time System for Forecasting Mesoscale Variability of the North Atlantic

- **Develop pilot forecast system for North Atlantic (1-15 days, eddy resolving)**
- **Assessment of forecast skill in operational setting. Comparison with CONCEPTS baseline system.**
- **Selected products through the GOAPP web page.**
- **Extend to global domain and transfer system to CONCEPTS by end of year 2.**

Real-Time Global Coupled Atmosphere-Ocean System: Transition to Operations

- **Couple and test CONCEPTS R&D global ocean model with meso-global GEM atmospheric model.**
- **Transfer GOAPP North Atlantic data assimilation system to the CONCEPTS R&D global ocean model**
- **Run the global coupled data assimilation and forecast system in real-time; compare against the benchmark CONCEPTS system. Complete by the end of year 2.**

Progress

Fred Woslyng hired October, 2008 as research technician.

- **Access to Near Real Time Data:** e.g., AVISO, Environment Canada, Argo data centers.
- **Developing a Data Delivery Strategy:** Based on OPENDAP and LAS.
- **Building the Data Management System:** Based on dedicated GOAPP data server.
- **Software Development:** Matlab routines for reading, analyzing and displaying datasets e.g., Pathfinder data.

Progress

Dr Yimin Liu hired November, 2008 as research scientist.

- **Model Development:** NEMO, 1/6 degree North Atlantic. New climatology, modified spectral nudging.
- **One Way Coupling to GEM:** One-way coupler developed to give fluxes of heat, salt and momentum. Diurnal changes are resolved.
- **Model Optimization and Evaluation:** Model spun up for 8 years. Statistics of equilibrium state encouraging.
- **Ocean Data assimilation:** Implementation completed, evaluation underway. (See Yimin's talk tomorrow).