

EGU24-2930, updated on 23 Jul 2024

<https://doi.org/10.5194/egusphere-egu24-2930>

EGU General Assembly 2024

© Author(s) 2024. This work is distributed under the Creative Commons Attribution 4.0 License.



NOAA's Unified Forecast System Research to Operations (UFS R2O) Project Phase II - Accomplishments, Progress and Future Plans

Vijay Tallapragada¹, Jeffrey Whitaker², and Jim Kinter³

¹NOAA/NWS/NCEP, Environmental Modeling Center, College Park, United States of America (vijay.tallapragada@noaa.gov)

²NOAA/OAR/Physical Sciences Laboratory, Boulder, Colorado, United States of America (jeffrey.s.whitaker@noaa.gov)

³COLA/George Mason University, Fairfax, Virginia, United States of America (ikinter@gmu.edu)

The UFS-R2O Project, which began in July 2020 as a five-year plan with deliverables for the first three years funded, has made significant progress in developing the medium-range and sub-seasonal to seasonal (MRW/S2S) predictions, a regional, high-resolution hourly-updating and convection-allowing ensemble system for prediction of short range severe weather (CAM/SRW), and a Hurricane Application developing a very high-resolution Hurricane Analysis and Forecast System (HAFS) with storm following moving nests. The Project is organized with Application Teams and Development Teams interacting with each other to reflect the cross-cutting nature of the UFS components and infrastructure. It fostered successful collaborations between the National Centers for Environmental Prediction (NCEP) Environmental Modeling Center, several NOAA research labs, the National Center for Atmospheric Research (NCAR), the Naval Research Lab (NRL), and multiple universities and cooperative institutes. Most significant outcomes of the project thus far are the implementation of the HAFSv1 ahead of the schedule, and the development of a six-way global coupled (atmosphere/ ocean/ land/ sea-ice/ wave/ aerosol) modeling system, both within the UFS framework, major accomplishments from the community modeling perspective.

The UFS-R2O Project has entered into its second phase (2023-2024), albeit with reduced funding, to continue the momentum built during the first phase. While the first three years of the project were focused on engineering and infrastructure, Phase II is primarily targeting systematic testing and evaluation of the prototype UFS configurations for selecting the candidates for potential transition to operations in the next few years. In addition, Phase II of the project includes a new Seasonal Forecast System (SFS) Application Team established to develop SFS v1 that will replace the legacy Climate Forecast System (CFSv2) currently in operations since 2011.

This presentation describes the outcomes of the UFS R2O Project for the first three years, and highlights the progress and plans for the Phase II.