Intense: Navy, civilian planners get big assist in storm predictions

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With the arrival of the Atlantic hurricane and Pacific typhoon season—and the often dangerous storms that can accompany it—new technology sponsored by the Office of Naval Research (ONR) will be used to help Navy and civilian officials alike plan for stormy weather, officials announced today.

Called the Coupled Ocean/Atmosphere Mesoscale Prediction System-Tropical Cyclone (COAMPS-TC), the groundbreaking new weather prediction model offers forecasters a detailed look at tropical storms and gives accurate predictions of a storm's intensity from one to five days out.

The new model went fully operational June 6 at the Navy's Fleet Numerical and Meteorology and Oceanography Center—the naval command that provides meteorological data to U.S. forces.

"COAMPS-TC will be invaluable to Navy leadership," said Dr. Ronald Ferek, the ONR program officer who helped sponsor the project. "It will give them detailed intensity and wind fields for site-specific damaging wind forecasts: 'This upcoming storm will exceed hurricane-force winds at X time, for Y hours.' For naval installations, that kind of forecast is really useful."

The program was developed by researchers at the Naval Research Laboratory (NRL), primarily to support the mission of the Department of Defense's Joint Typhoon Weather Center.

Accuracy has improved dramatically in recent years when it comes to predicting the path, or track, of tropical storms. However, until now, the ability to forecast a storm's strength, or intensity, has been much less reliable.

The new model will help close that capability gap.

Navy officials rely on accurate weather models for a wide array of fleet operations, including planning and executing military operations; avoiding damage; protecting or evacuating vulnerable installations; and humanitarian assistance and disaster relief—all part of Chief of Naval Operations Adm. Jonathan Greenert's Sailing Directions that emphasize using "new technologies and operating concepts" to create the ability to "operate forward at strategic maritime crossroads."

Part of the uniqueness of research to further improve COAMPS-TC involves utilizing unmanned aerial vehicles, like NASA's Global Hawk, to make observations above and inside the cyclones themselves, and at higher altitudes than ever before.

That kind of innovation and partnership is precisely what Chief of Naval Research Rear Adm. Matthew Klunder has emphasized in order to help increase knowledge to benefit the nation and its warfighters and to share the load on costs.

Investigators from NRL, National Oceanic and Atmospheric Administration and several universities are also collaborating on research to rapidly improve a new generation of regional (mesoscale) models designed to predict details of atmospheric and oceanographic processes that control tropical cyclone intensity. These models represent an entirely new capability for forecasting tropical cyclones.

"This effort is the poster child for interagency cooperation," said Ferek.

"The nation is benefitting from our shared science and technology work."

Provided by Office of Naval Research

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