US Navy Operational METOC Forecasting System –Progress towards Earth System Prediction Capability

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The US Navy operates globally and requires the capability to forecast the ocean and atmosphere environment anywhere and anytime. Regional crises, natural disasters, search and rescue (SAR) are just some of the situations that can appear without warning and at almost any location around the globe. This motivates having a solution available and ready to respond. Once on scene, tactical scale operations require predictive capabilities from very high resolution numerical models. On a global basis this implies computational requirements beyond what is feasible with present day supercomputers. The US Navy approach is to nest higher resolution local forecast models into the global system to apply computer power where it is required. However, these environmental prediction systems traditionally have been built as stand-alone systems that predict each aspect of the battlespace environment such as the ocean, atmosphere, waves, and ice. Now the development direction is toward building fully coupled systems to include all these models and represent their interactive effects.
This talk will show the evolution of models used in the US Navy from the present uncoupled systems to the future coupled system called The Earth System Prediction Capability (ESPC) in development now and scheduled to be operational by the end of 2018.

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