



**NRL BAA Announcement
75-17-01**

ATMOSPHERIC EFFECTS, ANALYSIS, AND PREDICTION

The Marine Meteorology Division of the Naval Research Laboratory (NRL) is interested in proposals for innovative basic and applied research in atmospheric sciences to increase our understanding of atmospheric processes and to advance the state-of-the-art in numerical analysis and prediction techniques, from short-term micro-alpha scale to global-scale phenomena. Areas of active interest include numerical methods; parameterization and explicit prediction of physical processes; assimilation of remotely sensed and other non-conventional data including radar data and data collected by autonomous vehicles; dynamic initialization; variational analysis and adjoint techniques; predictability, sensitivity, and targeted observation studies; ensemble prediction methods; data assimilation and modeling of the middle-atmosphere; tropical cyclone prediction; air-sea interaction; large eddy simulations; aerosol and cloud modeling; urban and land surface parameterizations; coupled air-land-ocean-ice-hydrology-wave models; and big data analytics.

We are also interested in proposals that provide new and novel methods for providing environmental support directly to the warfighter especially using tactical through-the-sensor data. Areas of particular interest include exploitation of atmospheric information from observations and numerical models to derive tactical weather parameters (including the quality control of such information), and research that increases our knowledge of the effects of the atmospheric environment on ship and air platforms as well as on shipboard, airborne, and land-based communications, sensors and weapons systems. Examples of specific research topics include meteorological applications of remotely sensed and non-conventional data; satellite data interpretation and imagery analysis; atmospheric acoustic propagation prediction; tropical cyclone forecast aids; artificial intelligence techniques and expert system development; model post-processing techniques; nowcasting including combined model, satellite and radar data; weather impact on piloted aircraft and UAV operations; aerosol measurement, characterization, and electro-optical effects; ducting, refractivity, and electro-magnetic effects; and atmospheric dispersion of chemical and biological agents.

Address White Papers (WP) to baa@nrlmry.navy.mil. Allow one month before requesting confirmation of receipt of WP, if confirmation is desired. Substantive contact should not take place prior to evaluation of a WP by NRL. If necessary, NRL will initiate substantive contact.