



AIRBORNE , SHIPBOARD, AND OVERHEAD DATA ACQUISITION AND

The Marine Physics Branch of the Naval Research Laboratory (NRL) is interested in receiving proposals for research and development in the areas of sensor technology, data acquisition, and data analysis in the field of fixed sensor, airborne and shipboard remote sensing.

The primary areas of interest are synthetic aperture radar, GPS navigation, multi- and hyper-spectral imaging, and radar/laser profilometry. The proposed research would address methods and techniques in data acquisition, analysis, and modeling for all of these sensors, with particular interest in ultra-wide-band SAR and hyperspectral sensors. The research may address issues in surveying and analysis of natural materials - i.e. sediment, water, snow, and ice - surface and sub-surface layers, vegetation, including multi-layered canopies, as well as man-made object and materials property evaluation using all remote sensing modalities from the entire electro-magnetic spectrum range.

The research may involve new and innovative research in long-range kinematic differential GPS navigation with a goal of producing decimeter level positioning of aircraft for baseline lengths of up to 1,000 kilometers. The research may also involve new methods of acoustic and non-acoustic modeling combining the water column with bottom and sub-bottom acoustic and non-acoustic characteristics in both shallow and deep-water regions. The research may also address issues in seafloor sediment characterization using novel contact and non-contact methods and instruments as well as modeling of sediment behavior in the wide range of deformation and rates-of-deformation regimes – both in situ and in laboratory environments.

The Marine Physics Branch particularly desires proposals on innovative techniques for:

- 1) Real-time acquisition and storage of data at high rates from numerous sensor channels;
- 2) Real-time high-speed data analysis and display; and
- 3) Optimal combined processing of multi-sensor data.

Address White Papers (WP) to code7420@nrl.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.