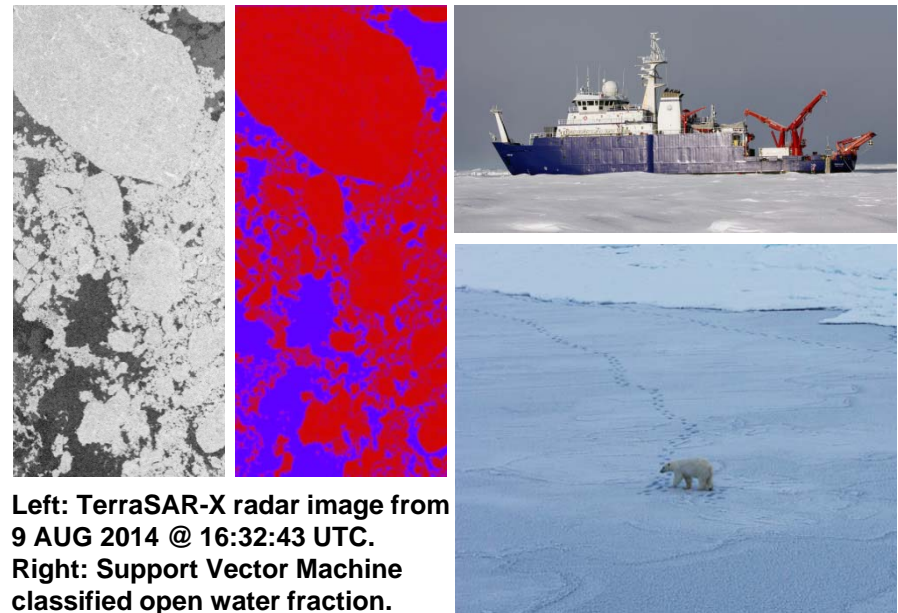


Satellite-based Monitoring of the Arctic Polar Regions

This project builds on 5 years of research in the Marginal Ice Zone of the Beaufort Sea. Using high-resolution satellite data (optical and microwave imagery) algorithms were developed to determine the open water fraction, percentage of melting ponds and floe size distributions using machine-learning techniques. Students working on this project will be involved in an international research program and have an opportunity to go to sea in the Arctic and also get involved with Marine X-band Radar observations of sea ice and air-sea interactions in ice-dominated waters. The new project will focus on among other topics on ice and snow thickness predictions and ice-sea-air interaction physics. Satellite data will be directly downlinked to University of Miami's ground station on the CSTARs (Center of Southeastern Tropical Advanced Remote Sensing) Campus (<http://www.cstars.miami.edu>) and processed for analytical research.



Left: TerraSAR-X radar image from 9 AUG 2014 @ 16:32:43 UTC.
Right: Support Vector Machine classified open water fraction.
Blue: Open Water. Red: Ice.