

Advanced Remote Sensing of Sea Ice Dynamics by Spaceborne Synthetic Aperture Radar

The latest fleets of commercial synthetic aperture radar (SAR) satellites can acquire series of images of the ocean surface at unprecedented spatial and temporal resolutions, independent of daylight and clouds. This makes the satellites very attractive for studies on sea ice dynamics in Arctic waters.

The PhD student in this project will get involved in the development of advanced techniques for identifying sea ice in SAR images and for tracking motions and deformations of ice floes over time. This can involve the use of machine learning techniques as well as advanced SAR imaging and image processing techniques, such as SAR interferometry, polarimetry, and subaperture image processing. Your degree will be in Ocean Sciences, but we are looking for someone with a really strong interest in remote sensing techniques and in the development and use of your own image processing tools and algorithms in Python or a similar language.

The University of Miami's Center for Southeastern Tropical Advanced Remote Sensing (CSTARS) is a receiving and processing facility for SAR images with direct access to the satellites.

