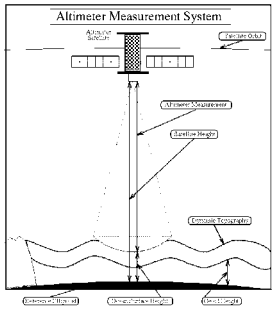
Ice-Sheet Change Studies Using Improved Orbit Error Analysis

Brief description of Research Project (1 page preferably, maximum 2 pages)

The goal of this project is to remove the orbit errors from satellite altimetry measurements of the Greenland and Antarctica ice sheets. Radar altimeters from various satellites (such as Seasat, Geosat, ERS, and GFO) have been used for 25 years to measure the elevation changes of these ice sheets for climate studies. However, the radar altimetry data is corrupted by orbit error caused by mass and gravitational variations of the Earth. This project (funded by NASA) involves developing a numerical strategy for filtering and removing the orbit error signal from the true geophysical signal.



Capabilities/objectives:

- The orbit error removal scheme should increase the accuracy of the radar measurements.
- The orbit error filter should be optimally tuned to remove errors with characteristic profiles while preserving true geophysical signals.
- The orbit error removal scheme should be general and easy to apply to any geographic location on the Earth (Greenland or Antarctica).

This work is applicable to researchers and engineers at NASA and other academic institutions.

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