



Study of elevation changes along a profile crossing the Greenland Ice Sheet

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In recent years much research has focused on determining how the Greenland Ice Sheet is responding to the observed climate changes.

There is wide agreement on the fact that the Ice Sheet is currently losing mass, and studies have shown that the mass loss is found near the ice edge and that no significant changes are found in the central part of the Ice Sheet.

As a part of European Space Agency's CryoSat Validation Experiment (CryoVEx) running from 2004 to 2008, the National Space Institute (DTU Space) measured the elevations along a profile crossing the Greenland Ice Sheet. The elevation observations were carried out in 2004, 2006 and 2008 using airborne laser altimetry from a Twin Otter aircraft.

The observed profile follows the old EGIG line (Expédition Glaciologique au Groenland, measured in the 1950's) situated between 69-71N, heading nearly east-west.

This unique dataset gives the opportunity to study elevation changes along the profile crossing the ice sheet. With this work, we outline the observed elevation changes from the different zones of the ice sheet.

We furthermore compare elevation changes based on coincident ICESat and airborne laser altimeter data.