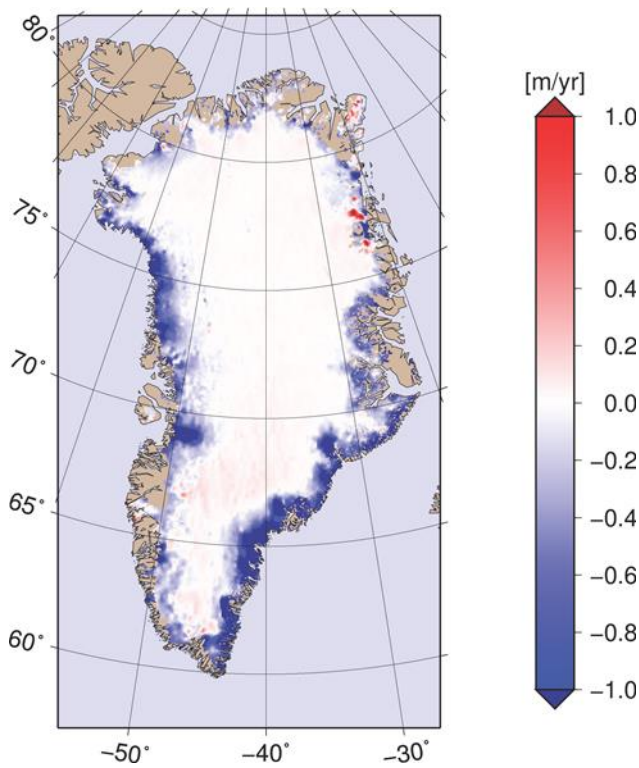


ICESat-derived ice changes in Greenland using mass changes time series as a constraint

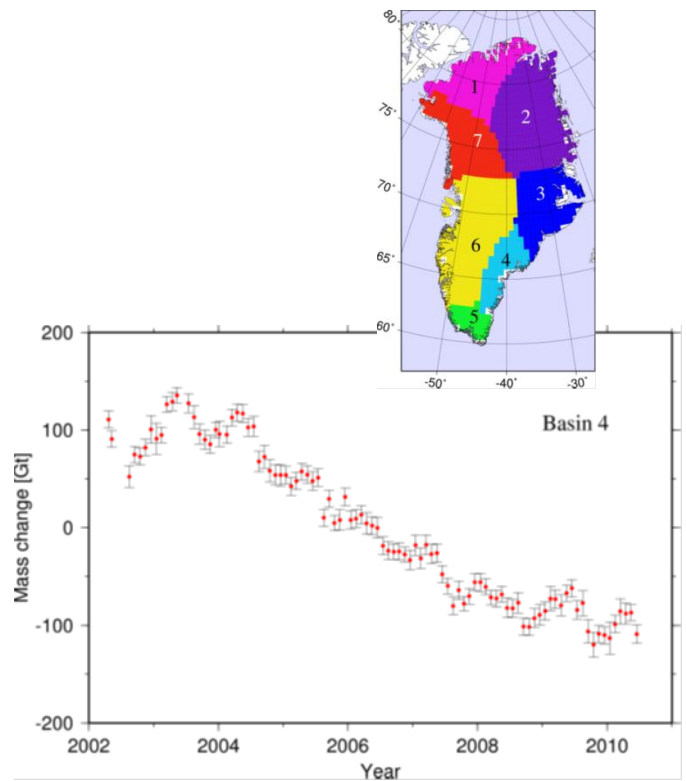
ICESat was a satellite laser altimeter launched by NASA, and it continuously measured e.g. the Greenland ice sheet in the period 2003-2009.

ICESat has been widely used to map the climate-change-driven changes of the ice sheet, and has revealed large thinning along the margins of the ice sheet (see figure below).

ICESat-derived ice volume changes rely on linear trend plus seasonal functions to fit the temporal distribution of measurements. The project aims to replace this simple function with more realistic temporal pattern derived by GRACE and test if the resulting residual error is reduced.



Elevation changes of the Greenland Ice sheet observed with ICESat 2003-09.



Mass changes of drainage basin 4 of the Greenland Ice sheet observed with GRACE