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Title: *Tidewater glaciers of Svalbard - retreat rate and calving flux based upon satellite remote sensing*

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More than 60% of the glacierized area of Svalbard Archipelago in High Arctic is drained by glaciers emptying into the sea. The poster presents long-term retreat and contemporary state of tidewater glaciers terminating in Svalbard basing upon topographical maps, aerial and satellite images and field measurements. The changes in the ice fronts position are excellent indicators of the glacier mass balance and climate changes in long-time intervals. Generally, there is a good relation between the retreat rate and temperature increase in the last century. Large glaciers with low slopes of a longitudinal profile made a major contribution to that spectacular shrinkage of the glaciers. Small land based glaciers are less affected by climate warming and undergo relatively minor changes.

Dynamic response of tidewater glaciers to climate warming results in faster transfer of ice mass from land to the sea what affects global sea level rise. Mass loss due to calving from the whole archipelago was estimated. Significant part of the total mass loss due to calving makes up retreat component. Contribute of surging glacier to the total flux as well as regional differences in retreat rate and calving intensity for the whole Svalbard Archipelago in period 2000-2010 were also analyzed. Rising of equilibrium line altitudes together with retreat of glaciers were noticed. Changes in ELA positions are probably caused by longer duration of the summer seasons in the last decade.

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