

Response to Editor Review

Thanks for this new version of your manuscript and the point to point reply to both reviews. I am happy to accept your paper for publication in The Cryosphere. I have nevertheless few minor comments that should be accounted for before final publication (see below).

Thank you for accepting our paper for publication in The Cryosphere and for providing the additional minor comments. We addressed these valuable comments in the latest revision of the manuscript. Our response to the Editor Review is given below, a "Track Changes" and a "clean" version of the revised manuscript were uploaded to our File Manager.

Comments:

page and line refer to the paper version with highlighted changes.

- page 1, line 20: the contribution of glaciers and ice-sheets is closer to 2/3 of the current total SLR than 1/3?

According to Table 13.1 of Church et al. (2013) the contribution of glaciers and ice-sheets to the current total SLR is closer to 1/3 than 2/3.

- page 2, line 13 and at other places in the manuscript: pin-point should be pinning-point?

Done.

- page 2, line 24: the total glacier mass balance of the ice masses of the Svalbard Archipelago -> the total glacier mass balance of the Svalbard Archipelago

Done.

- page 3, line 17: earth -> Earth

Done.

- page 5, line 6 (and elsewhere in the manuscript, check this): 1:100'000 -> 1:100 000

Done.

- Table 2: I still think that this long table should be moved in the supplementary material and synthetic informations (number of maps and time interval) given after the introduction of each instrument.

Done.

- page 6, line 1 (and elsewhere in the manuscript, check this): 3-days -> 3-day

Done.

- page 6, line 3: don't -> do not

Done.

- page 6, line 5, pair is only 15 m the phase -> pair is only 15 m, the phase

Done.

- Legend of Fig. 3 and elsewhere in the text: not sure that coastal line is correct. Isn't it coast line ?

Coastal line was changed to coastal outline.

- page 10, line 3: the sentence "So far, no deceleration phase is observed over the glacier" is a bit in contradiction with what is said elsewhere as you have observed lower winter velocity since 2015? May be you should elaborate a bit more about what you want to said here?

Agreed, we changed this to "So far, no distinct deceleration phase is observed over the glacier."

- page 10, line 21: are lower than the surface speeds -> are lower than the increase in surface speeds

Done.

- page 10, line 24: in ice deformation from -> in deformational velocity from (because the value you give after are velocity and not deformation).

Done.

- page 13, lines 10 - 16: 1'200-> 1 200 ; km^3: delete '^' and 3 should be an exponent of km

Done.

- page 13, line 20: the total mass loss of Edgeøyjökulen should be given in the same units as the value for Stonebreen (km³/yr instead of Gt/yr) to allow an easy comparison.

Done, Gt/yr is no more used.

Supplementary Table S1. Sensors, acquisition dates and time intervals of the satellite image pairs considered for ice surface velocity estimation.

Satellite Sensor	Acquisition Date 1	Acquisition Date 2	Time Interval
ERS-1 SAR	02/01/1994	05/01/1994	3 days
ERS-2 SAR	22/03/2011	25/03/2011	3 days
ALOS PALSAR Fine Beam Single	14/11/2010 04/01/2011	14/02/2011 19/02/2011	92 days 46 days
Radarsat-2 Wide	09/02/2009	05/03/2009	24 days
	05/03/2009	29/03/2009	24 days
	29/03/2009	22/04/2009	24 days
	04/06/2010	28/06/2010	24 days
	06/05/2011	23/06/2011	48 days
	23/06/2011	17/07/2011	24 days
	17/07/2011	10/08/2011	24 days
	10/08/2011	03/09/2011	24 days
	03/09/2011	27/09/2011	24 days
	27/09/2011	21/10/2011	24 days
	21/10/2011	08/12/2011	48 days
	13/03/2012	06/04/2012	24 days
	06/04/2012	30/04/2012	24 days
	30/04/2012	24/05/2012	24 days
	24/05/2012	17/06/2012	24 days
	17/06/2012	04/08/2012	48 days
	04/08/2012	28/08/2012	24 days
	28/08/2012	21/09/2012	24 days
	21/09/2012	15/10/2012	24 days
	15/10/2012	08/11/2012	24 days
	08/11/2012	02/12/2012	24 days
	12/02/2013	08/03/2013	24 days
	08/03/2013	25/04/2013	48 days
	25/04/2013	19/05/2013	24 days
	12/06/2013	30/07/2013	24 days
	30/07/2013	23/08/2013	24 days
	23/08/2013	16/09/2013	24 days
	16/09/2013	10/10/2013	24 days
	10/10/2013	03/11/2013	24 days
	27/11/2013	21/12/2013	24 days
	21/12/2013	07/02/2014	48 days
Landsat 8	14/07/2014	06/08/2014	23 days
	06/08/2014	24/08/2014	18 days
	24/08/2014	31/08/2014	7 days
	06/07/2015	02/08/2015	27 days
	02/08/2015	18/08/2015	16 days
	18/08/2015	17/09/2015	30 days
Radarsat-2 Wide Ultra Fine	04/02/2016	28/02/2016	24 days
	28/02/2016	23/03/2016	24 days
Sentinel-1 Interferometric Wide Swath	21/01/2015	02/02/2015	12 days
	02/02/2015	14/02/2015	12 days
	13/08/2015	25/08/2015	12 days
	25/08/2015	06/09/2015	12 days
	06/09/2015	18/09/2015	12 days
	18/09/2015	30/09/2015	12 days
	30/09/2015	12/10/2015	12 days
	12/10/2015	24/10/2015	12 days
	24/10/2015	05/11/2015	12 days
	05/11/2015	17/11/2015	12 days
	17/11/2015	29/11/2015	12 days
	23/12/2015	04/01/2016	12 days
	28/01/2016	09/02/2016	12 days
	09/02/2016	21/02/2016	12 days
	21/02/2016	04/03/2016	12 days
	04/03/2016	16/03/2016	12 days

16/03/2016	28/03/2016	12 days
28/03/2016	09/04/2016	12 days
09/04/2016	21/04/2016	12 days
21/04/2016	03/05/2016	12 days
03/05/2016	15/05/2016	12 days
15/05/2016	27/05/2016	12 days
27/05/2016	08/06/2016	12 days
08/06/2016	02/07/2016	24 days
02/07/2016	14/07/2016	12 days
14/07/2016	26/07/2016	12 days
26/07/2016	07/08/2016	12 days
07/08/2016	19/08/2016	12 days
19/08/2016	31/08/2016	12 days
