

Supplement of The Cryosphere, 11, 531–539, 2017
<http://www.the-cryosphere.net/11/531/2017/>
doi:10.5194/tc-11-531-2017-supplement
© Author(s) 2017. CC Attribution 3.0 License.



Supplement of

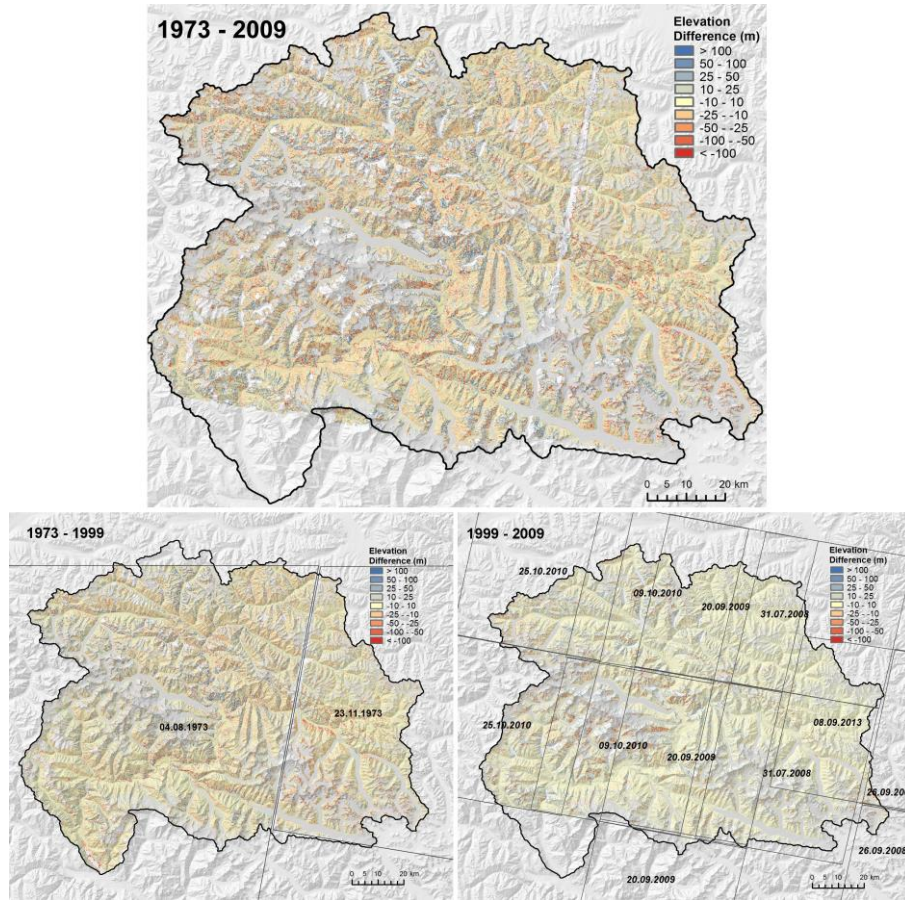
Brief communication: Glaciers in the Hunza catchment (Karakoram) have been nearly in balance since the 1970s

Tobias Bolch et al.

Correspondence to: Tobias Bolch (tobias.bolch@geo.uzh.ch)

The copyright of individual parts of the supplement might differ from the CC-BY 3.0 licence.

Supplementary figures and tables



5 **Figure S1:** Elevation differences of the off glacier area between the ASTER and Hexagon KH9 DTMs (above), the KH9 and SRTM DTMs (below, left) and the SRTM and ASTER DTM (below, right). The figure includes the coverage and the acquisition date of the images used for DTM generation of the different tiles.

Table S1: List of utilized satellite images

Date(s)	Sensor/Data	ID	Spatial Resolution	Purpose
04/08/1973 04/08/1973	Hexagon KH-9	DZB1206-500082L020001 DZB1206-500082L021001	~8m	Glacier mapping, DEM generation, DEM differencing
23/11/1973 23/11/1973 23/11/1973	Hexagon KH-9	DZB1207-5000451005001 DZB1207-5000451006001 DZB1207-5000451007001	~8m	Glacier mapping, DEM generation, DEM differencing
Feb. 2000	SRTM 1		30m	DEM differencing
25/10/2010	ASTER 14DEM	AST14DEM_00310252010055219_20140122060824_29130	30m	DEM differencing, glacier mapping
25/10/2010	ASTER 14DEM	AST14DEM_003000000000000000_20140122060834_29176	30m	DEM differencing, glacier mapping
09/10/2010	ASTER 14DEM	AST14DEM_003000000000000000_20140219133734_23637	30m	DEM differencing, glacier mapping
09/10/2010	ASTER 14DEM	AST14DEM_00310092010055216_20140219133724_23540	30m	DEM differencing, glacier mapping
20/09/2009	ASTER 14DEM	AST14DEM_003000000000000000_20140219133724_23558	30m	DEM differencing, glacier mapping
20/09/2009	ASTER 14DEM	AST14DEM_003000000000000000_20140219133724_23534	30m	DEM differencing, glacier mapping
31/07/2008	ASTER 14DEM	AST14DEM_00307312008055349_20140219133743_23680	30m	DEM differencing, glacier mapping
31/07/2008	ASTER 14DEM	AST14DEM_00307312008055349_20131210035721_12481	30m	DEM differencing, glacier mapping
26/09/2008	ASTER 14DEM	AST14DEM_003000000000000000_20140219133733_23639	30m	DEM differencing, glacier mapping
26/09/2008	ASTER 14DEM	AST14DEM_003000000000000000_20140219133734_23643	30m	DEM differencing, glacier mapping
08/09/2013	ASTER 14DEM	AST14DEM_00309082013054614_20140219133734_23638	30m	DEM differencing
11/07/2010	Cartosat-1	505/231	2.5m	DEM-generation DEM differencing
11/07/2010	Cartosat-1	505/232	2.5m	DEM-generation DEM differencing

Table S2: Number of used GCPs and their RSME after triangulation for KH9 and Cartosat-1 stereo image processing using Imagine Photogrammetry

	No. of GCPs	RMSE (Pixel)
KH9	26	1.29
KH9	28	1.4
Cartosat-1	32	3.91
Cartosat-1	35	0.33

5

Table S3: Used ASTER DTMs for the selected glaciers and weighted mean of time difference between DTMs used for calculating difference rates considering the acquisition date and the glacier coverage.

Glacier	Dates ASTER DTMs	Time difference ASTER – SRTM data (weighted mean)	Time difference ASTER – KH9 data (weighted mean)
Batura	09.10.2010/02.09.2009	10.8 years	36.8 years
Pasu	09.10.2010/02.09.2009	10.5 years	36.5 years
Barpu	09.10.2010/02.09.2009	10.5 years	36.5 years
Hispar	31.07.2008/02.09.2009	9.2 years	35.2 years
Yazghil	31.07.2008	9 years	35 years
Khurdopin	31.07.2008	9 years	35 years
Vijerab	31.07.2008/26.09.2008/08.09.2013	9.2 years	35.2 years
Whole region	Mean ca. 2009	10.1 years	36.1 years