

Table S1. Mean values of glacier-wide albedo retrieved from Landsat images at the Dongkemadi and XD glaciers.

Sensor (Path/Row)	Image Date	Dongkemadi	XD	Difference / %
Landsat TM (137/37)	2 August 2007	0.4892	0.4850	0.42
Landsat TM (138/37)	2 September 2010	0.3827	0.3795	0.32
Landsat OLI (137/37)	2 August 2013	0.4703	0.4674	0.29
Landsat OLI (137/37)	9 September 2015	0.3372	0.3434	-0.62

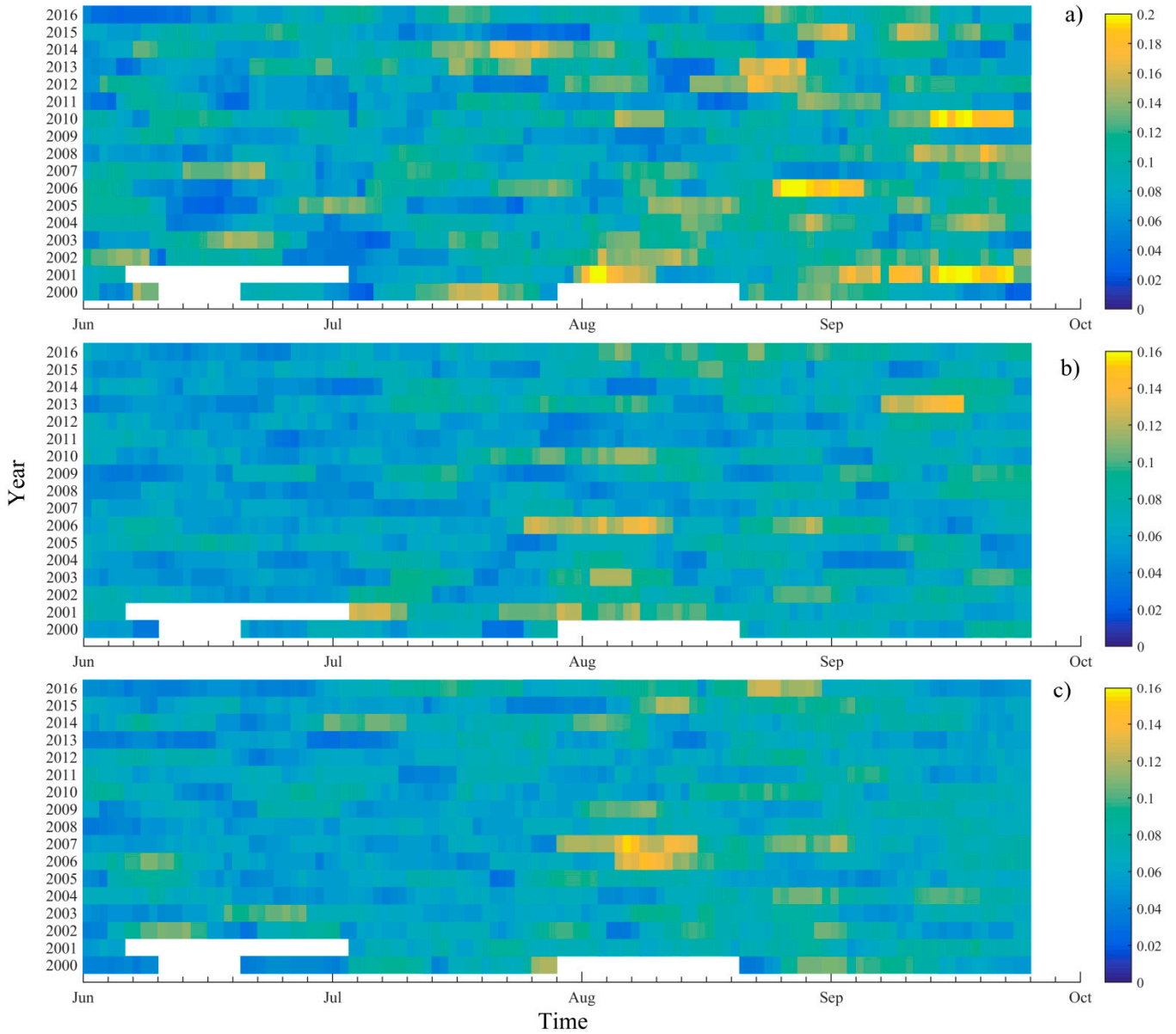


Figure S1. Standard deviation of the MODIS-derived glacier-wide albedo during the ablation season from 2000 to 2016: (a) XD glacier, (b) PIC and (c) GLDD. The mean value of the three regions is 0.09, 0.07, and 0.07, respectively.

Table S2. The MODIS-derived mass balances (MBs) and its errors from 2000 to 2016 at the studied glacier regions.

Year	XD		PIC		GLDD		West_GLDD		East_GLDD	
	MB/	Error/	MB/	Error/	MB/	Error/	MB/	Error/	MB/	Error/

	mm w.e.	mm w.e.	mm w.e.	mm w.e.	mm w.e.	mm w.e.	mm w.e.	mm w.e.	mm w.e.	mm w.e.
2000	-469	260	-182	275	-328	265	-439	258	-314	266
2001	-90	286	-28	286	-26	286	-94	281	-71	283
2002	-526	257	-4	288	-225	272	-194	274	-242	271
2003	-56	288	165	300	-5	287	-90	281	-2	288
2004	-204	277	37	291	42	291	12	289	66	293
2005	-266	273	177	301	151	299	-15	287	177	301
2006	-993	230	-425	258	-712	240	-727	240	-716	240
2007	-541	256	104	295	-194	274	-233	272	-202	273
2008	93	299	231	305	141	298	132	298	93	295
2009	-188	279	-291	267	-53	284	-182	275	-67	283
2010	-973	230	-520	252	-562	250	-679	242	-527	252
2011	-334	268	188	302	56	292	85	294	53	292
2012	-910	233	85	294	-167	276	-156	277	-184	275
2013	-1068	226	-591	248	-771	237	-673	243	-791	236
2014	-635	250	-413	259	-246	270	-422	259	-218	272
2015	-918	232	-259	270	-406	260	-541	251	-434	258
2016	-1024	228	-187	275	-829	233	-895	230	-857	232