

Supplements.

Table S1: Ice thickness of glaciers in Guokalariju calculated by different models.

Model	Min ice thickness (m)	Max ice thickness (m)	Mean ice thickness (m)
Open Global Glacier Model (OGGM; Maussion et al., 2018)	1	176	24.05
GlabTop2 (Frey et al., 2014)	1	208	23.87
Farinotti et al. (2019)	4	147	28.82

Table S2: Ice volumes (km³) and corresponding WVEQs (km³) referred to Janke *et al.* (2015) and calculated using the perfectly plastic model (Cicoira *et al.*, 2021) for sub-regions and Guokalariju-wide (All).

Region	Glacier WVEQ (km ³)	Min RG WVEQ (km ³)	Max RG WVEQ (km ³)	Mean RG WVEQ (km ³)	RG : Glacier WVER ratio
All	3.95	1.83	0.87	1.35	1:2.92
Western	0.06	0.08	0.17	0.13	2.08:1
Central	2.65	0.71	1.46	1.09	1:2.44
Eastern	1.24	0.06	0.21	0.14	1:9.19

*Min RG WVEQ = Active RG (25% ice content) + transitional RG (10% ice content) + relict RG (0 ice content)

*Max RG WVEQ = Active RG (45% ice content) + transitional RG (25% ice content) + relict RG (10% ice content)

*Mean RG WVEQ is the mean value of the min and max, and it used to be compared to the WVEQ of glaciers.