Supplementary Material for "The importance of sub-meter-scale snow roughness on conductive heat flux of Arctic sea ice"

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This supplemental information contains the results for the sensitivity test with a snow thermal conductivity of 0.3 W m^{-2}. All other parameters are identical to those described in the main text.

Table S1. Summary statistics each region and simulated heat fluxes for each region with snow thermal conductivity of 0.3 W m^{-2}.

Region	Resolution (cm)	Size (m)	Point density (# m^{-2})	Mean snow depth (cm)	Standard deviation snow depth (cm)	Coefficient of variation	Heat flux incl. horizontal (W m^{-2})	Heat flux vertical-only (W m^{-2})	Heat flux uniform snow (W m^{-2})
i	3	6.3x4.2	5.6×10^3	10	2	0.21	23.9	23.8	23.6
ii	6	12.6x8.4	3.5×10^3	13	4	0.29	21.9	21.6	21.2
iii	10	21x14	2.0×10^3	15	6	0.41	21.5	21.1	20.2
iv	15	31.5x21	1.2×10^3	15	5	0.34	20.8	20.3	19.7

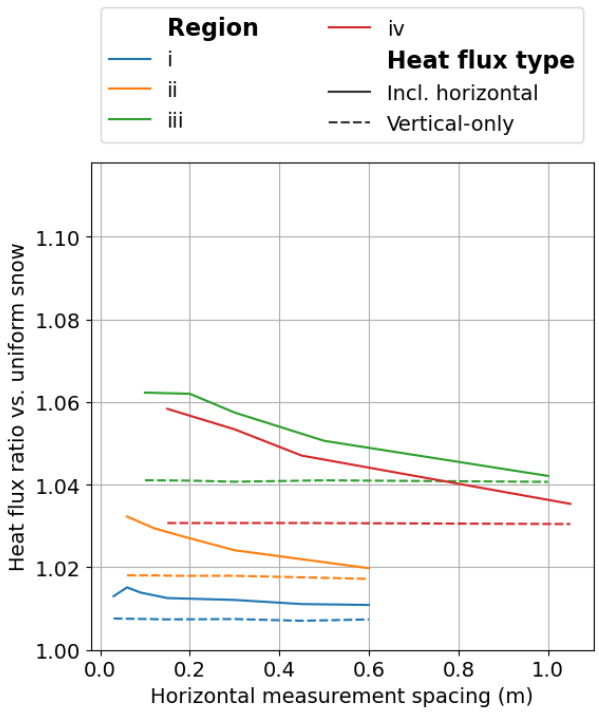

Fig. S1. Comparison of how increasing the horizontal measurement spacing (i.e., degrading the resolution) impacts simulated heat flux ratios relative to a uniform snow cover for simulations of vertical-only heat flux and including horizontal fluxes on each region with snow thermal conductivity of 0.3 W m^{-2}. Increasing measurement spacing does not impact the vertical-only heat flux ratios (dashed lines), but does reduce the horizontal heat flux ratios (solid). The y-axis limits are the same as in Fig. 2 to facilitate comparison.