Supplementary material for Hayashida et al.

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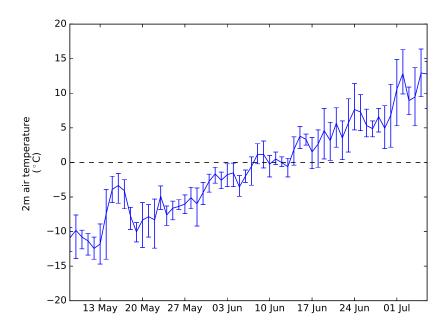


Figure S1: Time series of daily mean surface 2-m air temperature observed at Resolute airport during 2010. The upper and lower vertical bars associated with the daily mean values represent the daily maximum and minimum values, respectively.

(a) Standard Atmosphere Sea Ice Consumption DMSPp <u>Ocean</u> Photolysis (b) NoIceSul Atmosphere Sea Ice DMSPp Photolysis DMSPp_{sw} Consumption Sea-to-air flux Z1, Z2 (c) NoIceBgc Atmosphere Sea Ice Ocean Photolysis Exudation DM Consumption

Figure S2: Comparison of model schematic among (a) the standard run, (b) the NoIceSul run, and (c) the NoIceBgc run.