



*Supplement of*

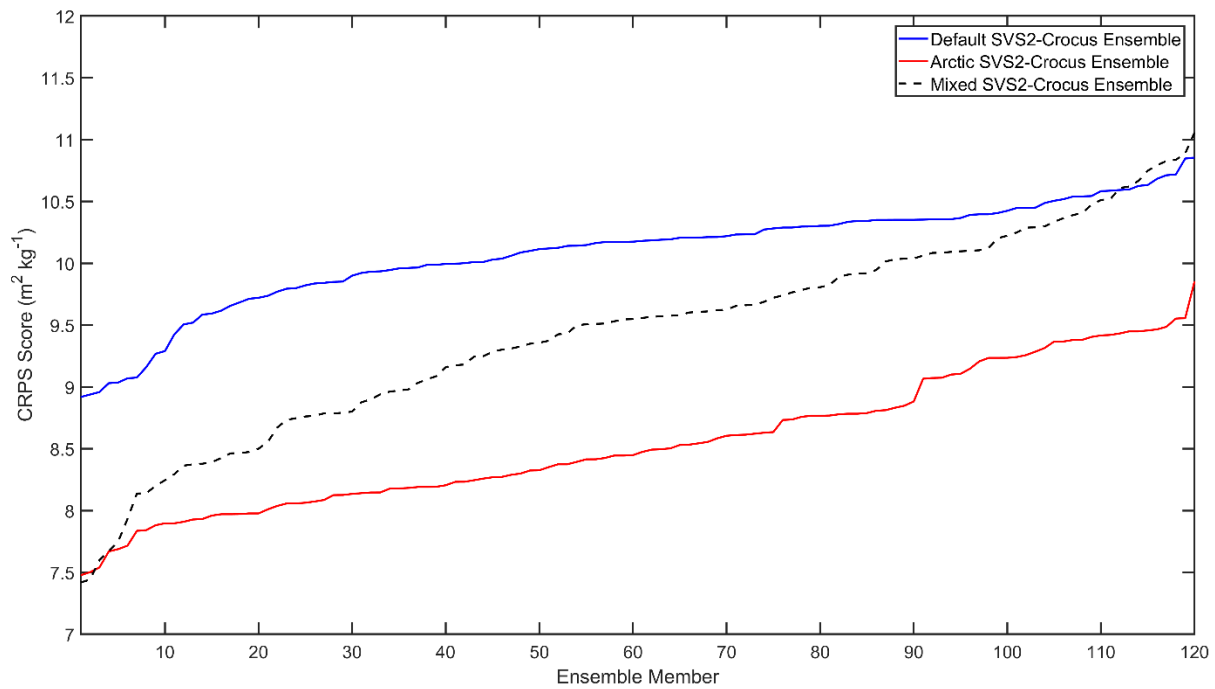
## **Multi-physics ensemble modelling of Arctic tundra snowpack properties**

**Georgina J. Woolley et al.**

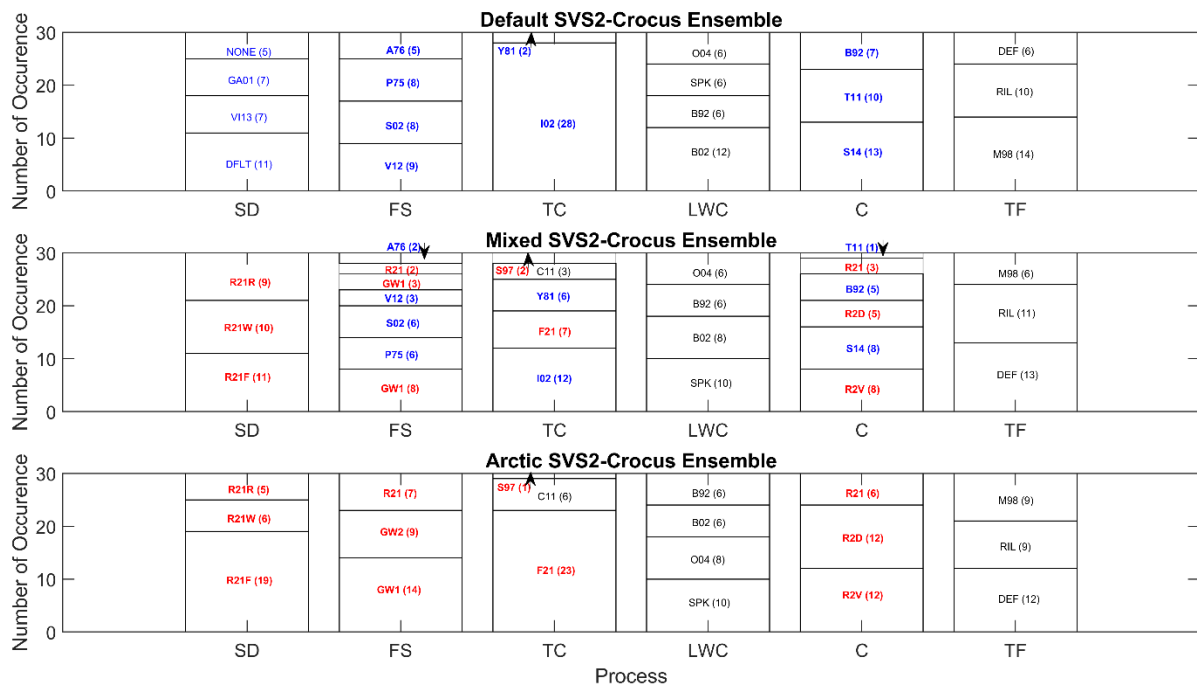
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## Supplementary Material (S1)



**Figure S1:** Comparison of CRPS scores for all 120 members of the default, Arctic and mixed ensembles of SVS2-Crocus for the simulation of SSA ( $\text{m}^2 \text{kg}^{-1}$ ) averaged over the whole snowpack in March 2018, March 2019, March 2022 and March 2023.



**Figure S2:** Number of occurrences of each parameterisation in the top 30 members with the lowest CRPS scores for simulation of SSA by default, mixed and Arctic SVS2-Crocus. Blue indicates members of the default ensemble; red indicates members of the Arctic ensemble and black indicates members of both. Numbers in brackets represent number of occurrence. SD: Snowdrift, FS: Falling Snow, TC: Thermal Conductivity, LWC: Liquid Water Content, C: Compaction, TF: Turbulent Flux.