

Modelling snow sublimation to improve estimates of sea level rise

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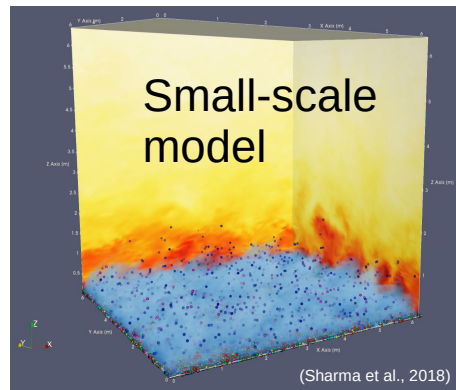
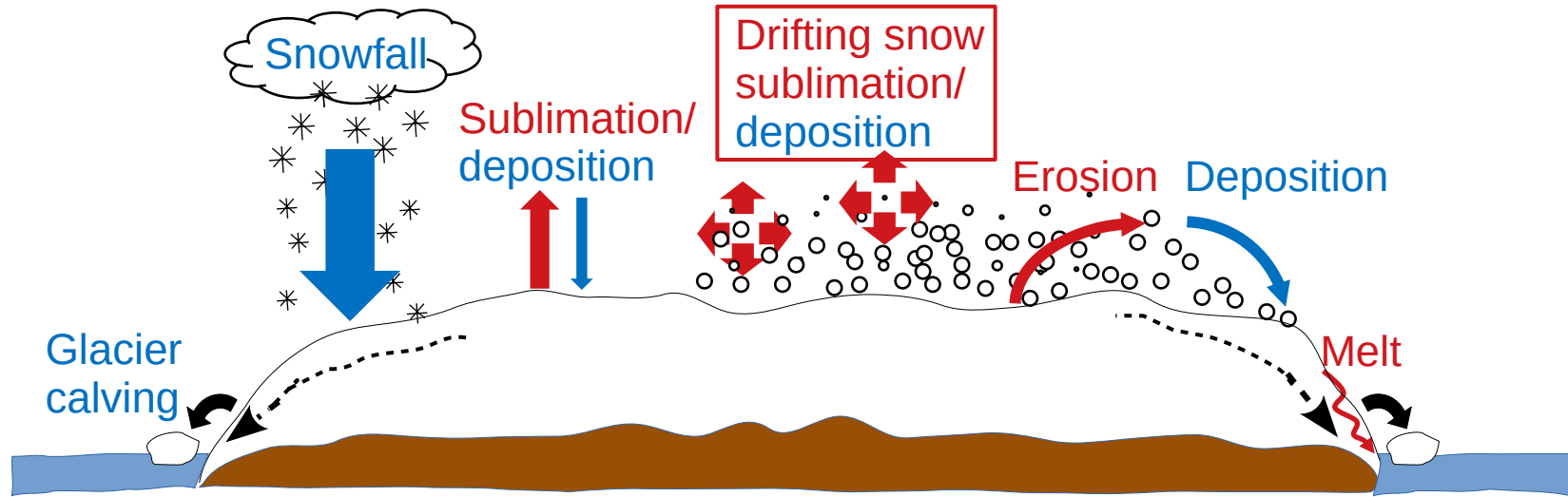
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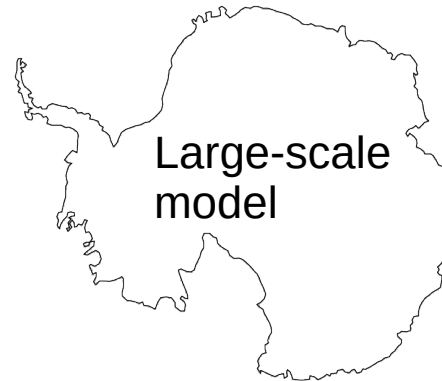

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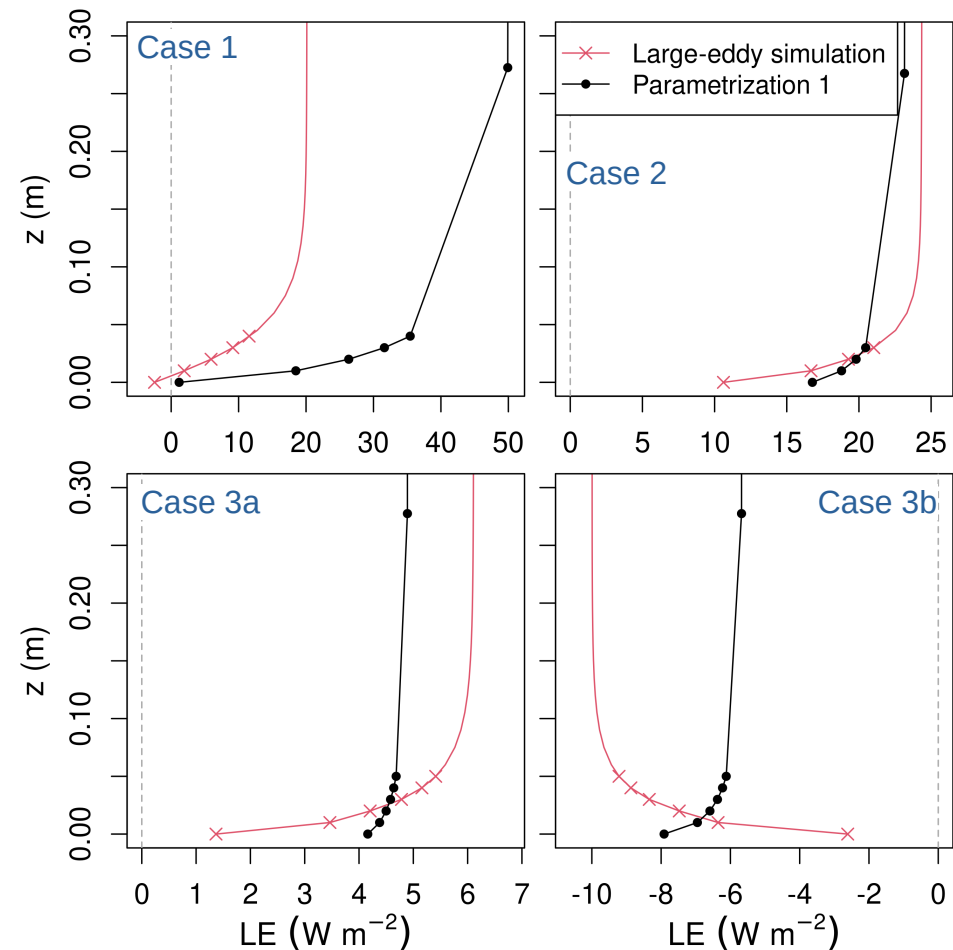
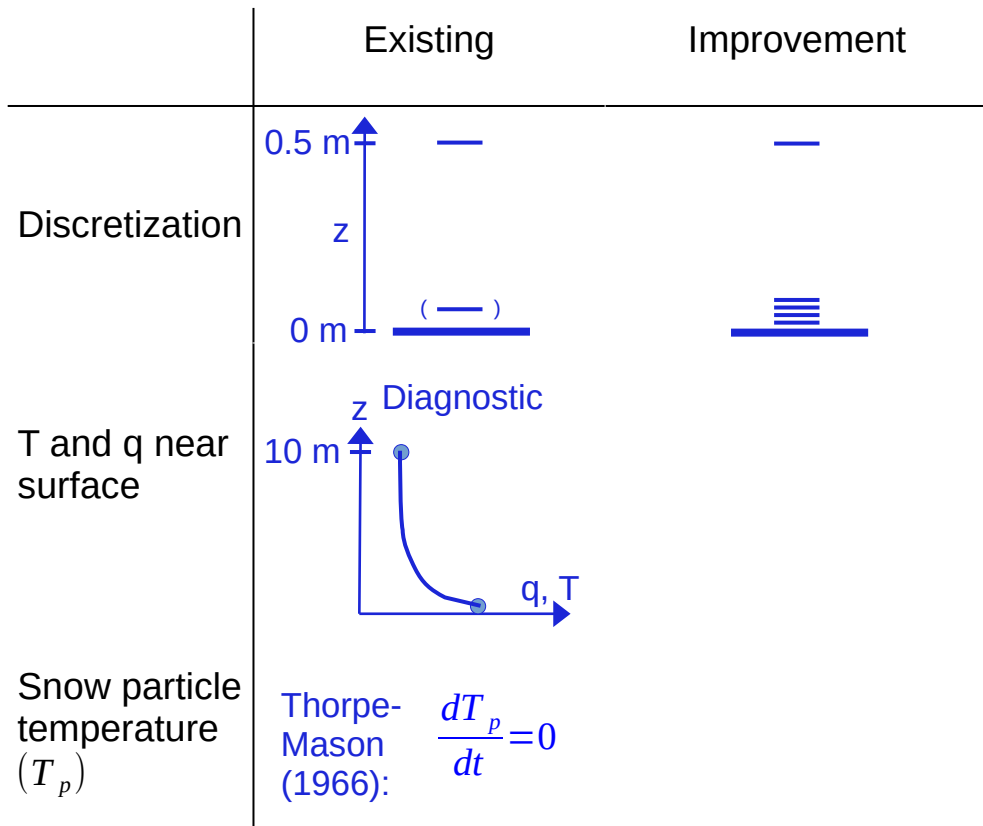
Mass balance of ice sheet



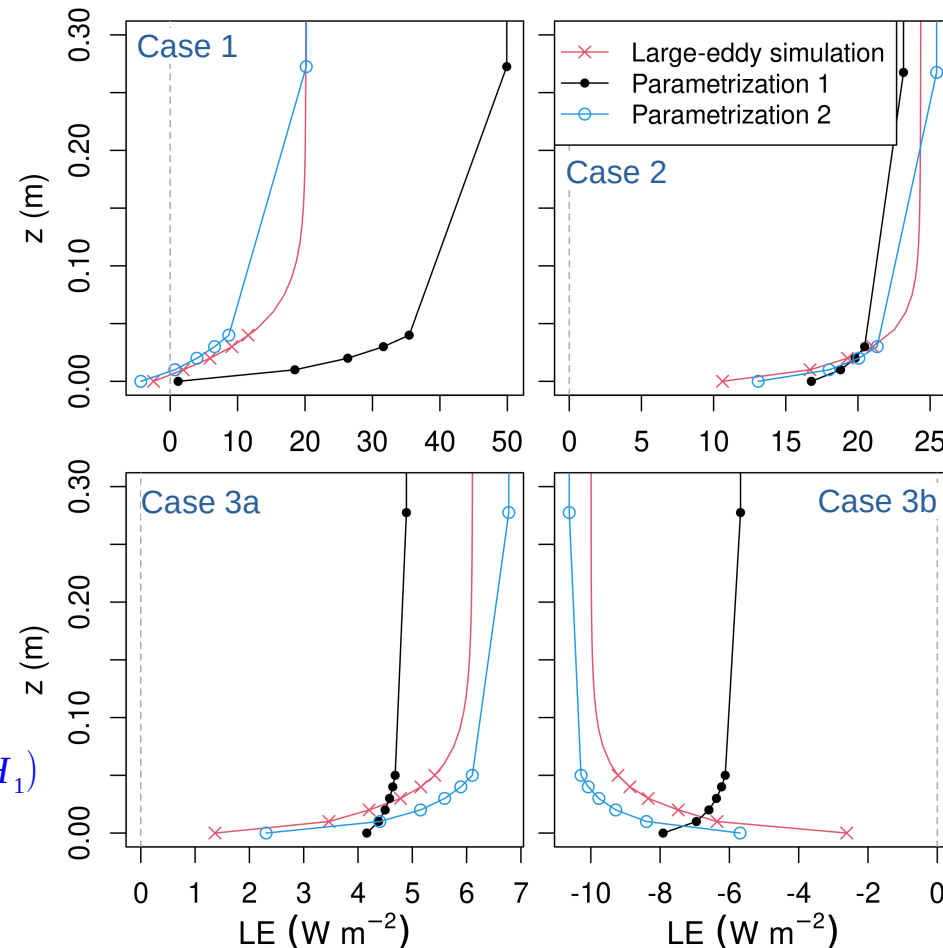
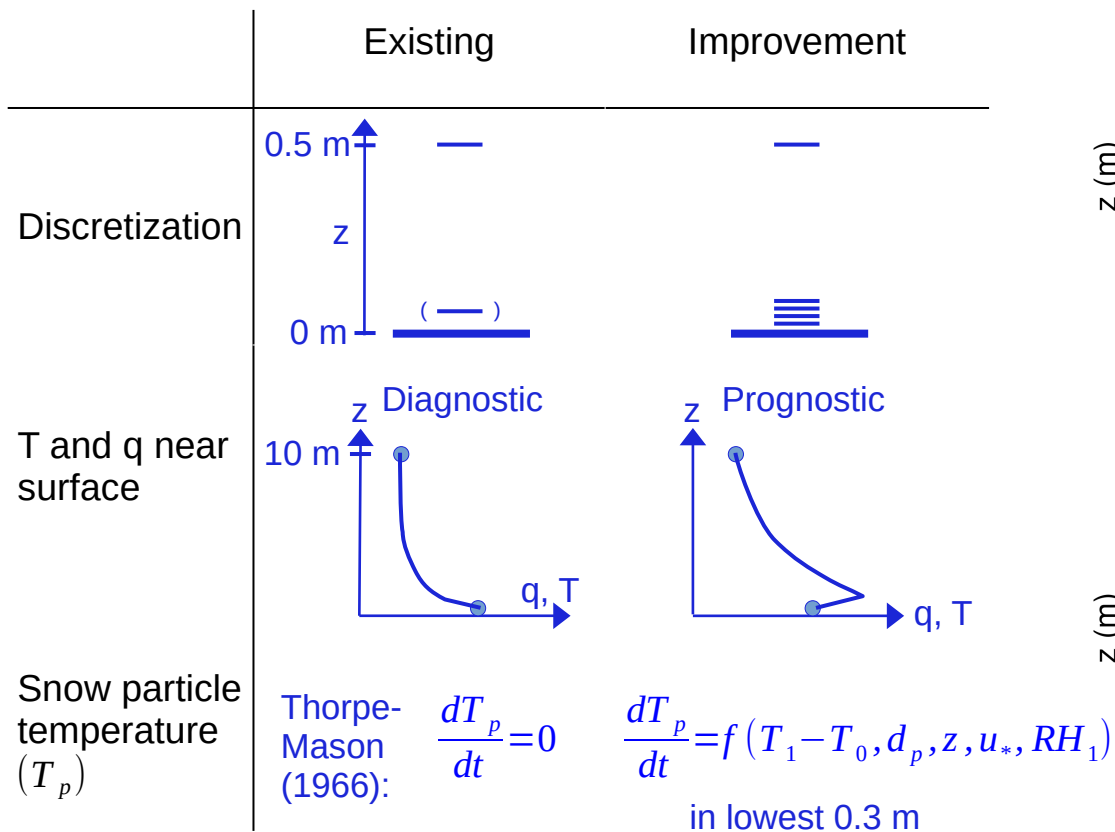
Parametrize



Parametrizing drifting snow sublimation



Parametrizing drifting snow sublimation



Conclusions



- Significant improvements in sublimation parametrizations are possible
- Outlook:
 - Impact on modelled surface mass balance of Antarctic ice sheet
 - Improvements in parametrizing the drifting snow concentration

References:

- Sharma, V., Comola, F., and Lehning, M., *On the suitability of the Thorpe-Mason model for Calculating Sublimation of Saltating Snow*, *The Cryosphere*, 12, 3499–3509, 2018.
- Sigmund, A., Dujardin, J., Comola, F., Sharma, V., Huwald, H., Melo, D.B., Hirasawa, N., Nishimura, K., Lehning, M., *Evidence of Strong Flux Underestimation by Bulk Parametrizations During Drifting and Blowing Snow*, *Boundary-Layer Meteorol*, 2021.
- Thorpe, A.D. and Mason, B.J., *The evaporation of ice spheres and ice crystals*, *British Journal of Applied Physics* 17, 541–548, 1966.

Thank you!