EGU22-12729
https://doi.org/10.5194/egusphere-egu22-12729
EGU General Assembly 2022

Modelling the ocean-ice interactions at the broken state of ice shelves

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Below ice shelves, complex interactions between the ice and the ocean are at stake that have large implications for future sea level rise. Basal melting from the ocean is recognised to have large impacts on the stability. Many studies focus on theses interactions in coupled models at different spatio-temporal scales. However, most of them consider the basal topography of the shelf as smooth ignoring its irregular state due to basal crevassing or channel-like features. We propose to investigate the impact of these features on basal melt and ice shelf stability by using a discrete particule model and an ocean model applied at the ice shelf of Thwaites glacier.