



## **A parameterisation of frazil ice collection thickness in leads and polynyas for large scale sea ice models**

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In large scale sea ice models, newly formed ice in leads and polynyas is customarily accreted instantaneously alongside the flanks of pre-existing ice with a prescribed accretion, or collection, thickness of 0.1-0.5 m. In reality, the frazil ice collection thickness,  $H$ , depends on the width of the lead or polynya, the oceanic wave activity, and the relative velocity of the frazil ice flow with respect to that of the consolidated ice. Several parameterisations of  $H$  encountered in the scientific literature have been introduced in a large scale sea ice-ocean general circulation and their impact on the seasonal cycle of the Arctic and Southern Ocean sea ice covers has been investigated. Results from these simulations are presented here.