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Assessing z-level modelling of the ice shelf - ocean boundary layer

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Ice shelf dynamics play a key role in the climate. Melt-rates along the ice shelf-ocean interface are an important aspect in determining the character of global sea level rise. A representation of ice shelf melt is currently implemented in various z-level General Circulation Models (GCMs) by employing parameterisations of the small scale boundary layer dynamics. However, these parameterisations are strongly dependent on the near boundary flow and at the spatial scales for which GCMs are intended the boundary layer is not well resolved. We investigate the ability of a GCM in representing these small scale boundary effects. This is done using MITgcm in an idealised setting with a sloping ice-ocean interface.