



Rapid changes in the ice front in the HadGEM1 climate model

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During the Antarctic winter the passage of low pressure systems near the ice front can cause movements of the ice front by several hundred kilometres in a few days. The time scale of response of the Antarctic ocean, during such events, is investigated using high temporal resolution data from the Hadley Centre climate model, HadGEM1. It is shown that the processes of wind mixing and radiative cooling deepen the mixed layer, releasing warmer water from depth. The enhanced surface warming causes in a lag in the subsequent freeze-up. The implications of increased incidences of winter cyclogenesis in the Bellingshausen Sea on Antarctic Peninsula warming are discussed.