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## High resolution atmospheric and oceanic modelling over Antarctica: a coupling interface to study sea-ice processes

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Understanding the future evolution of the climate over Antarctica is crucial, as the continent holds the potential for a 3-meter rise in sea levels by 2300. However, the Antarctic climate is impacted by various processes and interactions, particularly at the ocean-atmosphere-sea ice interface, which are not fully implemented in Global Climate Models (GCMs). We are developing a high-resolution two-way coupling between the regional climate model MARv3.13 and ocean/sea-ice model NEMO4.2/SI3 to study these processes, such as blowing snow over sea-ice, and their potential impact on future polar climate scenarios selected by the PolarRES consortium. We evaluated the standalone models' performance in simulating current climate conditions using various meteorological observations, satellite data, and ship observations. The results of this study are a first step to check the setup before moving to a fully coupled interface, and already show the importance of regional modelling to better resolve specific processes.