

Investigating the unprecedented 2016 sea ice extent minimum with an eddy-permitting Southern Ocean configuration

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The Southern Ocean (SO) sea ice extent reached an unprecedented and unanticipated minimum in the spring of 2016. The maximum extent in this year also occurs much earlier in the season than on average. A large part of this event's causes can be attributed to changes in the Antarctic atmosphere, reverberating on the SO through air-sea fluxes. However, the ocean thermal content also needs to be taken into account for enhancing future predictions of such extreme sea ice events. Here we investigate this aspect using several simulations obtained from a new NEMO-LIM eddy-permitting (1/4°) and ice shelf cavities including Southern Ocean configuration, developed within the framework of the Belgian PARAMOUR project. A particular focus will be given to the vertical heat fluxes in the ocean and how the conditions in summer and fall have an impact on the ocean and sea ice state at the winter maximum of the ice extent.

Oral preference

I am not available on Friday, May 10th.