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## Origin of the recent warming along the Angola Namibia coast

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The Angola Benguela Front (ABF), is a very dynamic area, characterized by a high-temperature gradient of up to 4°C per degree latitude. It fluctuates in position and intensity seasonally which strongly affects the local marine ecosystem. A lot of research, in the past decades, has focused on the SST variability at the interannual timescale in the ABF and the Angolan and Northern Namibian coast to the north and south of it in the context of Benguela Niños and Niñas. A warming trend since the 1980's in that region has been reported in the literature and was attributed to a decreasing trend in wind speed. In this study, we look at the processes responsible for the warming in the ABF region. The OGCM NEMO model is used for that matter. The results suggest that the warming is due to various processes acting during different seasons. In autumn, the modelled SST warming trend occurs along the Angolan sector and it is associated with a positive trend in net surface heat flux ( $Q_{net}$ ) and with the weakening of the vertical flow associated with the upwelling of cooler water to the surface. In early summer (November-January), the modelled SST warming trend occurs along the Angolan and Namibian sector and it is primarily associated with the intensification of a coastal poleward flow bringing more warm water from the tropics into the ABF region and with the weakening of vertical flow, while locally,  $Q_{net}$  trend generates a cooling trend. The modelled SST cooling trend that occurred south of the ABF, especially in winter and early spring, is primarily associated with a northwards trend in the horizontal subsurface current that advects cooler water from the south and an intensification of the upwelling of cold water to the surface.