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Effect from polynyas in the Laptev and the Beaufort seas to atmospheric transport of heat and moisture

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Coastal and fast ice polynyas in the Arctic seas can have a noticeable effect on the Arctic climate, increasing the temperature of the cold air which coming from continental Siberia in winter to these seas and in the Arctic basin [1-2]. In this paper, were studied the effect of polynyas on surface air temperature and on the meridional heat and moisture transfers by the ERA-Interim reanalysis data. From reanalysis, meridional heat transfers were obtained through 70 ° N and 74 ° N, air temperature profiles, wind speed in the region of the Laptev (100 - 140 ° E.) and Beaufort (120 - 160 ° W.) Seas, and polynyas which located in the Laptev Sea (120 - 130 ° E) and Beaufort (160 - 140 ° W.). It was confirmed that winter transfers of cold air from the mainland do not have a cooling effect on the average winter air temperature north of 74 ° N due to the heating effect of polynyas.