

Physics and Physical Oceanography MSc Seminar

Contribution of surface flux and ocean heat transport convergence to the interannual heat content variability of the Labrador Sea

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DATE: Thursday, April 16, 2020

TIME: 3:00 pm

Place: Brightspace Online Room (see link below)

<https://ysu-na.youseeu.com/sync-activity/invite/622351/7b25745cedd23aceaf86b511bb1816b2?lti-scope=d2l-resource-syncmeeting-list>

ABSTRACT: The heat budget of the ocean region 65°W-40°W, 45°N-65°N is studied based on in-situ observations of ocean temperature and surface air-sea flux for the period from 1993 to 2018. This region includes the Labrador Sea to the north, the area of North Atlantic Current in the southeast and Newfoundland Basin in the south. The convergence of the heat flux transport (CHFT) is computed from the equations of the tendency of heat contents of surface (0-150m depth), intermediate (150-2000 m depth), deep (below 2000 m) layer and the whole ocean column. The magnitude of variations of SHFT in the surface and intermediate layers exceed several times the year-to-year changes of SHFT in the deep layer. The highest interannual variability of CHFT is observed in the regions of the Newfoundland Basin and North Atlantic Current. The CHFT in the first region was found to be influenced by the influx of sea-ice from the Northern Labrador Sea during the winter region. The interannual variability of the CHFT in the second region represents the year-to-year change in the heat transport by the extension of Gulf Stream in the Subpolar North Atlantic. The CHFT in the central, eastern, northwestern, and northeastern sub-regions of the Labrador Sea were found to be highly correlated ($r > 0.7$). There is a very weak correlation between the CHFT in these regions and the DHFT in the Newfoundland Basin and North Atlantic Current.

ALL ARE WELCOME!