Geophysical Research Abstracts, Vol. 9, 02282, 2007
SRef-ID: 1607-7962/gra/EGU2007-A-02282

Seasonal variations of AW temperature from annual records in deep part of the Laptev Sea

G. Alekseev, N. Ivanov , B. Ivanov, A. Korablev

Arctic and Antarctic Research Institute

(alexgv@aari.nw.ru / Fax: 7 812 3522688 / Phone: 7 812 352191)

To investigate a seasonal cycle of the Atlantic Water temperature in the northern part of the Laptev Sea we used seven annual series of daily Atlantic Water (AW) temperature from five moorings deployed in 1996-2005 along northern edge of shelf slope. To search annual variation we implemented method of Fourier decomposition of daily temperature records and then approximated annual variation by first four Fourier components. Parameters of variation at different depths and its expanse rate were estimated under assumption of “frozen” seasonality penetrated into the Arctic Ocean through Fram Strait. Opposite assumption that annual variation is related with seasonal change of wind direction over the Laptev Sea area is discussed. In summary we conclude that seasonal signal of AW temperature can spread from the Fram Strait up to the Laptev Sea and annual variation close to AW core leads variation over the core. To estimate velocity and time of AW spreading along slope via “frozen” seasonal signal the measurements should be fulfilled at moorings with distance between ones not more 300 km. This study was supported by RFBR (project 06-05-64054).