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Interactive comment on “The link between the Barents Sea and ENSO events reproduced by NEMO model” by V. N. Stepanov et al.

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Received and published: 17 August 2012

I believe that the manuscript represents significant scientific and practical interest.

Results received in the reviewing work by the numerical modelling of the response of Barents Sea on the ENSO Events quite agree with the hydrophysical observations in the Sea [Byshev, Neiman, 2000; Byshev, Lebedev; 2000; Byshev et al., 2001]. However horizontal resolution even 10 km is too rough for numerical modelling of hydrodynamical processes in these latitudes because of very small value of radius of Rosby Deformation.

It is well known fact that the parametrisation of deep convection remains the serious problem in the numerical modelling of ocean circulation.. According the author’s model

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the vertical convection in the Barents Sea attains only to 200 m. But it was established by the observations in [Byshev et al. , 2001; Byshev et al., 2002] that in winter 1997-1998 vertical convection in the Barents Sea have developed up to the bottom of the Sea (more then 250 m)..

Southern Oscillation was discovered by Leighly [Leighly,1933], who proposed to use the differences of the sea surface pressure between Tahiti and Darwin as the index of this oscillation. Bjerknes [Bjerknes, 1966, 1969] was one of the first scientists who paid attention to the response of the atmosphere in the extratropical latitudes to the large-scale positive anomaly of the surface water temperature in the tropical zone of the Pacific Ocean.

On my view in the reviewing work was not be taken into account some important papers, concerning the numerical modelling of the circulation in the Barents Sea [Semenov, Chvelev. 1996; Sidorova, Shcherbinin.2009,2011]. They recieved that in the period of El-Niño the inflow of water from North Atlantic in the Barents Sea is rather small, but there is an intensive inflow of cold waters with low salinity from central Arctic ocean and from Kara Sea.

Some mistakes are in the references on the pages 2125 and 2126. Paper of Brodeau et al.

was published in 2010, but not in 2009.

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