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Discussions

Interactive comment on "Properties and mass transport differences across the Falkland Plateau between 1999 and 2010" *by* M. Dolores Pérez-Hernández et al.

Anonymous Referee #1

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Review of the paper by M. Dolores Pérez-Hernández, Alonso Hernández-Guerra, Isis Comas-Rodríguez, Verónica M. Benítez-Barrios, Eugenio Fraile-Nuez, Josep L. Pelegrí, and Alberto C. Naveira-Garabato

"Properties and mass transport differences across the Falkland Plateau between 1999 and 2010"

The authors present a very detailed analysis of water masses in the region of the Falkland Plateau and their comparison between 1999 and 2010 on the basis of two hydrographic sections in the region. However, the main goal of their study is comparison between the properties and mass transport across the Falkland Plateau. The analysis of the differences and causes is not sufficient for immediate publication.

This region is the location of the beginning of the Falkland Current but the authors just mention this fact as not very important.

The cruises were made in different seasons of the year: the austral fall and summer (April and February). The changes in the water properties and dynamics between these two seasons can occur not only in the surface layer as the authors report. It is well known that the seasonal changes in the Falkland Current are very strong. The changes in the geostrophic component of the Falkland Current may reach the depths of 2000 m. Since the changes in the Falkland Current exist, similar changes may occur in the region where the current starts. Some analysis of what had happened between 1999 and 201 is needed. The authors cite a publication by BÅŚning et al. [2008], but this paper analyzes the changes in the ACC caused by decadal changes in the wind field. I would appreciate an analysis of the AVISO data in the region and variations in the geostrophic currents during the study period (or at least in the period when the AVISO data are available and reliable). The analysis of the seasonal changes in the geostrophic currents is important. Then, this analysis should be linked with the observations performed with an interval of 11 years. The changes that occur over a period of 11 years and the seasonal changes should be separated. The changes in mass transport even in the subsurface layers can be associated with the seasonal changes in winds. I am sure that some CTD data from the stations occupied in the region in the years between 1999 and 2010 can be found in the databases and added to the analysis. The main drawback of the analysis presented in this manuscript is complete absence of any data related to the period of 11 years.

I can recommend this manuscript for publication only if such analysis would be added. Major revision is currently needed.

A few minor remarks. Do not use different notations in one figure. Red and black dots in Fig. 1a and black and gray dots in Fig. 1b. Is Fig 1b is just a copy of the figure from another text?

What are the units of color scale in Figs. 3 and 4? I recommend changing color in one of the color scales not to use tones of red and blue in both color scales with different units. Do not use the same colors for different properties.

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