Geophysical Research Abstracts
Vol. 18, EGU2016-2944-7, 2016
EGU General Assembly 2016

The applicapility of the steric height criteria of the Antarctic Circumpolar Current jets

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According to the steric height criteria of the jets of the Antarctic Circumpolar Current (ACC) the cores of these jets are kept in time and in a whole circumpolar circle at the same isolines of the steric height. The applicability of these criteria was analyzed on the basis of two databases. The first one is the data of several hydrophysical sections carried out south of Africa which were executed in 2004–2010 along the same track. The second one is the series of daily digital maps of the sea level anomaly (SLA) published by the French CLS agency (www.aviso.oceanobs.com). The analysis was executed by comparing two types of curves along the track. The first one is the differences in the steric heights at the same points between two sections. The second one is the differences in SLA at the same points. The analysis revealed an example of a lack of geometric similarity of these curves for the sections in December 2009 and October 2010 in the southern half of the ACC. This lack is up to 10 cm in the SLA values. This fact points to inapplicability of the steric height criteria of the ACC jets in general. In the other words there is no permanent no-motion surface (depth) in the ACC even in time.