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Jets of the Antarctic Circumpolar Current in the Drake Passage Based on Hydrographic Section Data

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We have analyzed the fine structure of Antarctic Circumpolar Current jets in the Drake Passage based on CTD and SADCP measurements over two hydrographic sections in January 2010 and October–November 2011. Eleven jets with a local horizontal velocity maximum were revealed in 2010, and nine jets were in 2011. These individual jets were various combinations of 12 jets of the Antarctic Circumpolar Current, which we revealed earlier in the region south of Africa on the basis of the section data in December 2009. Daily satellite altimetry data available at <http://www.aviso.altimetry.fr> were also used to interpret the synoptic patterns of currents over the sections. These results allow us to suggest that the multi-jet structure with a number of jets exceeding nine reported by Sokolov&Rintoul, 2009 is common for the entire circumpolar circle and even for regions with significant contraction of the ACC, such as the Drake Passage. However, the question about the number of jets and its temporal and spatial permanency remains open. Investigation was supported by Russian Foundation of Basic Research grant No 18-05-00283.

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