The Antarctic Circumpolar Current (ACC) develops to area of convergences and divergences of the Southern Ocean, which is confined of Subantarctic Front (SAF) and Polar Front (PF). Position of the SAF and PF were constructed from GODAE High Resolution sea surface temperature (SST) Pilot Project gradients based on satellite SST data. According to the SAF and PF average annual position the ACC northern and southern borders was determined as 60 and 100 cm isolines in combined mean dynamic topography (MDT), which calculated by in situ, drifter and altimetric measurements relative to 1500 dbar. The ACC axis was defined as location of geostrophic speed maximum along meridian between stated isolines on the synoptic dynamic topography, which are constructed by superposition of sea level anomaly altimetry data with corresponding MDT. Value of surface speed on the ACC axis was determined as intensity of this current. Along ACC axis seven local maximum of geostrophic surface speeds (more 20 cm/s) are observed. Thus average geostrophic surface speed along the ACC axis makes 16 cm/s, and it changes from 10 to 15 cm/s on ACC borders (SAF and PF). However interannual changes are various for different past of the Southern Ocean. For example they are insignificant in Darke Passeg, but near Kergelen Plateau position of the ACC axis dislocates to south with rate about 0.02 deg/yr or 1.8 km/yr, while the ACC intensity isn’t change almost.

This study was supported by the grants of the Russian Foundation for Basic Research (No 10-01-00806, 10-05-01123 and 11-05-97020).