The Antarctic Circumpolar Current (ACC) connects all the three major oceans and is characterized by strong localised meridional thermohaline gradients which give rise to baroclinic fronts.

Collection and analysis of water-column temperature data across the ACC south of New Zealand and South Africa is one of the main topics of the “Southern Ocean observing system and Chokepoints: Italian Contribution” (SOChIC) project endorsed in the Climate of Antarctica and the Southern Ocean (CASO) program.

We aim to identify temperature distribution anomalies associated to mesoscale eddies and to compare the behaviour of the ACC and its fronts across different chokepoints. To do this XBT data collected through the chokepoints are used to identify temperature anomalies then in order to discriminate between anomalies due to ACC meanders from those due to the presence of eddies, altimeter data provided by the AVISO are used. Moreover XBT data allow us to compare the in-situ front positions to the satellite derived positions. Both information, eddies presence and fronts position, are crucial as rings originating from the subantarctic front (south of New Zealand) and from the subtropical front (south of Africa) trigger a cross-frontal exchange of water masses between the subtropics and the subantarctic region.

In this work, we present preliminary results of Italian and South African efforts to monitor the ACC south of Africa and New Zealand during early 2010. Typical values of eddies dimension, path, life time and heat content are provided on the basis of data collected south of New Zealand.