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The Conrad Rise as an obstruction to the Antarctic Circumpolar Current.

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The Antarctic Circumpolar Current (ACC) carries water freely around the whole continent of Antarctica, but not without obstructions. Some, such as the Drake Passage, constrict its path, while others, such as mid-ocean ridges, may induce meandering in the current's cores and may cause the genesis of mesoscale turbulence. It has recently been demonstrated that some regions that are only relatively shallow may also have a major effect on the flow patterns of the ACC. This is here shown to be particularly true for the Conrad Rise. Using the trajectories of surface drifters, altimetry and the simulated velocities from a numerical model, we show that the ACC bifurcates at the western side of this Rise. In this process it forms two intense jets with speeds up to 25 cms^{-1} at the two meridional extremities of the Rise with a relatively stagnant water body ($0 - 5$ cms^{-1}) over the Rise itself. Preliminary results from a recent cruise provide compelling support for this portrayal. This current configuration may have important implications for the ecology of the region.