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TRACKING THE ANTARCTIC CIRCUMPOLAR CURRENT FRONTS USING PENGUIN AND SEAL DIVE DATA

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Vertical temperature profiles collected by king penguins and elephant seals are used to map oceanographic fronts south of Australia and New Zealand. Independently, the Southern Ocean front locations are derived using satellite synoptic maps of sea surface height (SSH). There is good correspondence between Antarctic Circumpolar Current (ACC) front locations derived from temperatures sampled along the penguin and seal tracks and front positions inferred using SSH maps. Mesoscale features detected in the SSH maps from the eddy-rich regions are also reproduced in the individual temperature sections based on *in situ* dive data. The foraging strategy of Macquarie Island king penguins appears to be influenced strongly by oceanographic structure: almost all the penguin dives are confined to the region close to and between the northern and southern branches of the Polar Front. Surface chlorophyll distributions also reflect the influence of the ACC fronts, with the northern branch of the Polar Front marking a boundary between low surface chlorophyll to the north and elevated values to the south.