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Antarctic Polar Frontal Zone from Australia to the Drake Passage

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ABSTRACT

North-south temperature sections drawn from historical XBT observations averaged over various longitude bands are compared with sections drawn from existing hydrographic data. Corresponding features in both types of sections are related to changes in upper-layer water masses by the use of temperature-salinity relationships. A series of six of these sections covering the area from south of Australia east to the Drake Passage are employed to define the positions of two discontinuities or fronts. These fronts are the northern and southern boundaries of a complex transition region, called the Antarctic Polar Frontal Zone, between the Antarctic and Subantarctic Surface Waters. This transition region varies in width both zonally and seasonally, and is the site of eddies and meanders of the boundaries.

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