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Intrinsic variability of the Subantarctic Front in the southwestern Atlantic: a model study

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A sigma-coordinate ocean model implemented in a wide area of the Southern Ocean and forced by steady climatological winds is used to analyze the variability of the Subantarctic Front in the southwestern Atlantic. The low-frequency variability yields regime shifts on an interannual time scale in the Argentine Basin connecting an active and a collapsed Zapiola Anticyclone. The high-frequency variability, analyzed through a wavelet analysis, presents complex patterns composed of mesoscale eddies and topographic Rossby waves. Low- and high-frequency indices introduced to characterize the variability reveal possible mechanisms of mutual interactions.