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# An Atlantic interhemispheric teleconnection established by South American summer monsoon

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This paper reports the structure of an interhemispheric atmosphere–ocean coupling pattern, which occurs over the Atlantic Ocean from January to February, and refers to it as the Atlantic symmetric pattern (ASP). The ASP occurs in the middle–upper troposphere, with two trains of cyclonic–anticyclonic–cyclonic anomalous circulations aligned meridionally over the Atlantic Ocean. The sea surface temperature (SST) signature of the ASP, which is composed of a distinct SST dipole, is the leading mode of the interannual SST of the Southwest Atlantic Ocean. Experiments with the linear baroclinic model shows that the interhemispheric wave trains of the ASP can be excited as a Gill-type response to convection in the South American monsoon system and the South Atlantic convergence zone. Further studies are warranted to elucidate other aspects of the ASP, including teleconnection in the Northern Hemisphere and interactions with other climatic modes.