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Southern polar stratospheric metrics of the Australian Community Climate and Earth-System Simulator (ACCESS)

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We use a set of metrics for the polar atmosphere to compare coupled ocean-atmosphere general circulation models (AOGCMs) experiments for the 5th Coupled Model Intercomparison Project (CMIP5) with results from chemistry-climate models (CCMs) of the 2nd Chemistry-Climate Model Validation (CCMVal-2) activity. The metrics summarise latitudinal and vertical averages of temperature, winds, stationary wave amplitudes and phases, location and strength of the polar night jet (PNJ), the time of onset of summer easterlies and the area of potential polar stratospheric cloud formation. We focus on how well the Australian Community Climate and Earth System Simulator (ACCESS) AOGCM performs over the recent historical period compared with the computationally more complex CCMVal-2 CCMs, and discuss how differences between ACCESS and observed climatologies are influenced by dynamics and chemistry in the polar stratosphere.