Session: B8 Oral presentation

Stratospheric ozone depletion and Southern Hemisphere climate change

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We will review recent observational and modeling evidence for the importance of stratospheric ozone depletion on the atmospheric circulation of the Southern Hemisphere. Notably, the ozone hole will be shown to be the dominant driver of the the poleward shift of the summer midlatitude jet that has been observed in the last several decades, and the accompanying southward expansion of the Hadley circulation and the subtropical dry zones. The climatic importance of the projected recovery of stratospheric ozone will also be discussed, with emphasis on the fact that the closing of the ozone hole will largely cancel, over the next half century, the effect of increasing greenhouse gases on the atmospheric circulation. The large variability of widely used circulation indices and the resulting need for large ensembles of model integrations for determining statistically significant circulation trends will be highlighted.