Changes in the circulation of the midlatitude polar jet streams have been noted in response to anthropogenic climate change. The poleward expansion of both northern (NH) and southern hemisphere (SH) jets have been linked to a variety of radiative effects, satellite observations, and increased greenhouse gas concentrations. The NH jet has expanded in response to increased greenhouse gas concentrations, while the SH jet has shown little change.

Methods - \( \frac{V_{\text{new}} - V_{\text{old}}}{V_{\text{old}}} \) Symmetric Ratio

- Period of study: 1948-2013
- Uses the 6-hourly NCEP/NCAR reanalysis product
- Period of study: 1948-2013

Analyses were conducted as follows:
- Each component was evaluated over the region of interest.
- The mean of the symmetric ratio for each jet is calculated as in equation 1.
- Divides each component by the overall mean to calculate the symmetric ratio.

Description:

- Each component is divided by the overall mean to calculate the symmetric ratio.
- The mean of the symmetric ratio for each jet is calculated as in equation 1.
- Divides each component by the overall mean to calculate the symmetric ratio.

Results:

- Each component is divided by the overall mean to calculate the symmetric ratio.
- The mean of the symmetric ratio for each jet is calculated as in equation 1.
- Divides each component by the overall mean to calculate the symmetric ratio.

Conclusions

As expected, the NH jet is more sensitive to changes in the NH greenhouse gas concentrations than the SH jet. The NH jet has shown a significant expansion in response to increased greenhouse gas concentrations, while the SH jet has shown little change. This difference is likely due to the greater influence of natural variability on the SH jet.