

**Variability and changes to the mean meridional circulation in
isentropic coordinates**

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Supplemental Information

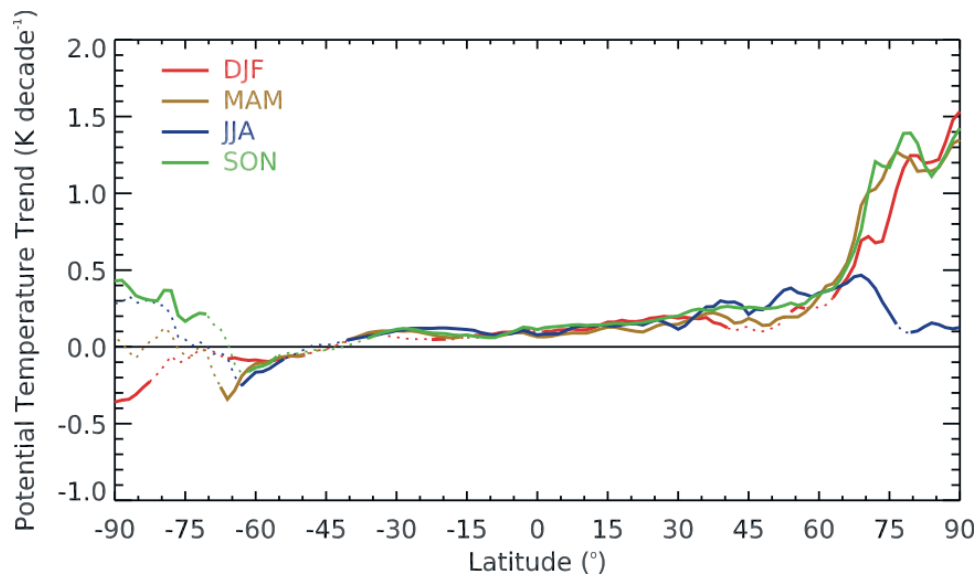


Fig S1 Seasonal trends in the median surface potential temperature θ (K decade⁻¹) from 1979–2017. Bold lines indicate trends that are statistically significant at 95% level, dotted lines are not statistically significant

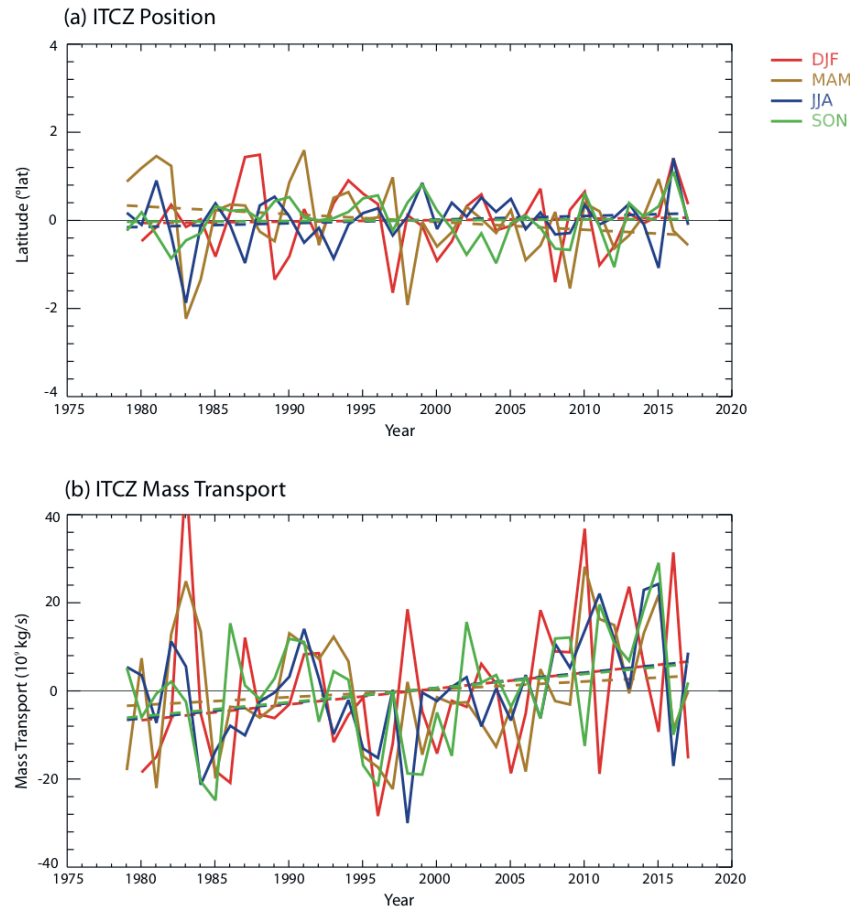


Fig S2 Time series showing the seasonal anomaly of ITCZ **a** position and **b** mass transport (intensity in 10^9 kg s^{-1}). Anomalies are calculated relative to the mean of each respective season: (red) DJF, (brown) MAM, (blue) JJA and (green) SON. Dashed lines represent linear regression trend lines. Positive values in **b** reflect a stronger mass transport

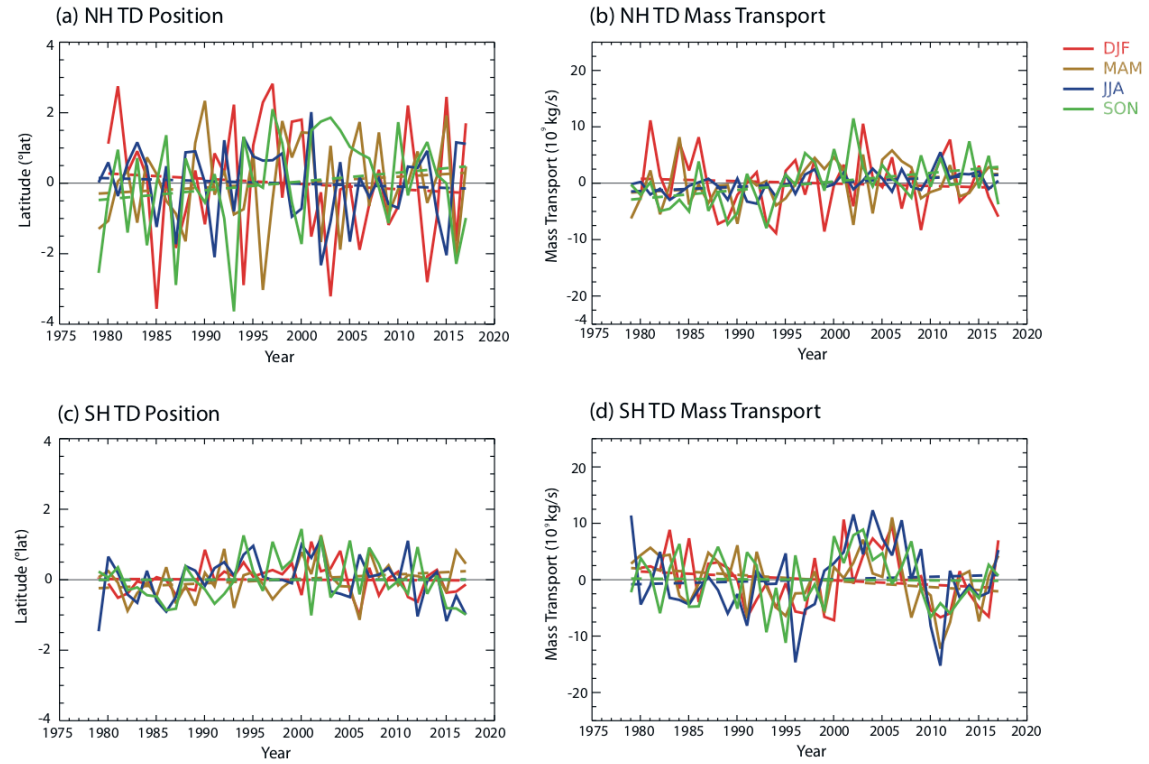


Fig S3 As in Fig. 8, except for the transient downdraft (TD) characteristics: **a** NH position, **b** NH mass transport, **c** SH position and **d** SH mass transport. Negative values mean stronger mass transport