

# **Interannual variability of some atmospheric temperatures**

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The 12-month running means of stratospheric low latitude zonal winds are known to show predominantly a QBO (quasi-biennial Oscillation), while ENSO (El Niño/Southern Oscillation) indices have predominant QTO (quasi-triennial Oscillation) and higher periodicities, and a minor QBO. Here, it is shown that temperatures at different atmospheric levels also had QBO (Quasi-biennial Oscillation), QTO (Quasi-triennial Oscillation) and larger periodicities. But for mesosphere, the QBOs and QTOs were irregular and the peaks did not match with those of either wind or ENSO. Peaks in the lower stratosphere matched well with those of wind. Peaks in the troposphere matched with ENSO. In general, the temperature trends in the last 35 years show stratospheric cooling (most probably due to ozone depletion) and tropospheric warming (probably due to greenhouse effects). The trends are not monotonically linear, and downtrends started at different times at different levels.