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Stratospheric trends from four reanalyses

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The long-term trend of different atmospheric parameters has been studied separately during previous years in many papers. This study is focused on the temperature, wind (u and v component), geopotential height and water vapour trends during 1979-2016. We present the trend for each month with respect to ozone turnaround during mid 1990s. The different reanalyses (MERRA, ERA-Interim, JRA-55 and NCEP-NOE) are used for comparison. We analyzed every grid point to reduce the problem with zonal averages in different pressure levels. The results will show the complex view on the trend in the middle atmosphere (troposphere, stratosphere and lower mesosphere). This comparison can give us the clue which reanalysis is better for studying different phenomena (QBO, NAO, ENSO, etc.) and which one has some issues.