Long-term trend in NH SBUV V8 zonal mean ozone between 1979 and 2003

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We report on a multi-variate trend regression model that is applied to SBUV V8 zonal
mean NH total ozone data from 1979 to 2003. This model attempts to account for
all relevant physical processes that are known to contribute to longterm changes in
ozone. Important explanatory variables are winter cumulated PSC volume accounting
for polar ozone loss and its impact on mid latitudes by mixing, and the winter/spring
cumulated eddy heat flux accounting for planetary wave driving that transports ozone
into high latitudes. The use of the latter term takes also into account the correlation of
winter/spring variability to summer variability in total ozone. In addition stratospheric
aerosol loading, two QBO terms, and a solar cycle term are included. The remaining
term is either a linear term or the estimated effective stratospheric chlorine loading
(EESC). A detailed investigation on varius latitude bands from the tropics to high
northern latitudes have been carried out to elucidate on the cause of the recent increase
in NH total ozone observed for almost all months and latitude bands. First results on
height resolved ozone will be also reported.