



Three different conversions of the Randel & Wu (2007) (RW07) ozone data set from altitude to pressure levels, and from DU/km into mixing ratio, for two different latitude bands and two different seasons. The green line shows the ozone mixing ratio profile if RW07 is converted with a fixed scale height of 7 km (no additional auxiliary data was used). The red line shows the ozone mixing ratio profile if RW07 is converted with the U.S. standard atmosphere. This is the conversion that was used for the comparison in the manuscript. The brown line shows the ozone mixing ratio profile if RW07 is converted with a zonal mean, monthly mean temperature climatology (here: COSPAR International Reference Atmosphere, CIRA). Differences between the profiles vary depending on the season and on the latitude region. In the tropics the fixed scale height profile (green line) is clearly lower than the other two profiles (red and brown line) above ~20 hPa, which show comparable ozone values, independent of season. However, in the Southern Hemisphere (SH) polar regions, the season is important for the magnitude of the ozone differences. In SH winter (JJA) when temperatures are most different for conversions with a fixed scale height, a standard atmosphere, and a zonal mean temperature profile, the resulting ozone profiles can differ by more than a factor of two in higher regions of the atmosphere.