

Interannual variations in N₂O concentration, total ozone, and breakup time of the polar vortex, and their correlations

Hideharu Akiyoshi[1]; Libo Zhou[2]

[1] NIES; [2] IAP, CAS

N₂O in the lower stratosphere has the long chemical life time and the large gradients in horizontal and vertical near the polar vortex boundary. Therefore it can be used as a passive tracer of the horizontal and vertical transport there. Planetary wave activity in winter stratosphere has effects on N₂O concentration in the lower stratosphere, total ozone, and the polar vortex breakup time in the spring through the meridional circulation and the eddy transport. Interannual variations in these three quantities are analyzed using the outputs from the CCMVal-REF2 run by the CCSR/NIES chemistry-climate model (CCM), and correlations between them are examined.