

SEPARATION OF CHEMICALLY AND DYNAMICALLY INDUCED OZONE TRENDS IN WINTERLY NORTHERN LATITUDES

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The 25 year TOMS ozone data series (1978 – 2005) in the Northern Hemisphere is investigated with respect to longitudinal and latitudinal dependant trends. Sinusoidal structures in the longitudinal trend behaviour are interpreted in terms of planetary wave activity. This is in agreement with an observed trend in the amplitudes of the planetary waves with zonal wave number 1 and 2. These trends are found to clearly vary with month and latitude. This effect is used to separate chemically and dynamically induced ozone trends. It is discussed how the background ozone concentration in midlatitudes might be influenced by streamer events caused by breaking planetary waves.

trend analysis, planetary waves, ozone, streamer

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