



EQUATORIAL KELVIN WAVE SIGNATURES IN TOTAL OZONE COLUMNS FROM GOME

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Kelvin waves play an important role in the dynamics of the equatorial atmosphere. Forced by convective heating these waves propagate vertically carrying momentum into the middle atmosphere. The absorption of Kelvin waves is believed to influence the quasi-biennial oscillation (QBO) in the lower stratosphere and the semi-annual oscillation (SAO) in the upper stratosphere and mesosphere. Both these oscillations are major features in the global circulation.

The Global Ozone Monitoring Experiment (GOME) is a nadir viewing instrument on board the ERS-2 satellite, which was launched in April 1995. Its main objective is to measure the global distribution of ozone and other trace gases.

This study shows that the GOME ozone column data exhibits features which can be attributed to tropical Kelvin waves. Three periods of high wave activity have been identified in 1996, 1998 and 2000 in conjunction with westward equatorial zonal winds at 30 hPa. These periods show eastward propagating waves 1-2 with periods of approx. 15 days. The significance of the results has been verified, by using the statistical behaviour of the spectral analysis method, and will be discussed.