

Influence of the 11-year solar cycle on the effects of the equatorial quasi-biennial oscillation, manifesting in the extratropical atmosphere

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On the basis of ozonesonde data obtained at 10 stations located in Europe (3), Canada (4), Japan (3) the comparative analysis of the responses on the equatorial quasi-biennial oscillation (QBO effects), manifesting in ozone and temperature in solar maximum and minimum conditions was carried out. The QBO effects, manifesting in the maximum and minimum substantially differ. In the minimum the amplitudes of the effects in 1.5-2 times are greater, than in the maximum. Also, in the minimum the QBO effects reveal much more connectivity of obtained at different heights signals and display downward phase dynamics with a rate of the phase descend slightly exceeding 1 km/month. This feature can be easily traced from the height of 25 km down to a surface. The differences of the effects, manifesting in solar minimum and maximum conditions can serve as a proof that influence of the 11-year solar cycle on atmospheric parameters can be realized and amplified through the influence on the equatorial QBO and its effects.