



A CLIMATOLOGY OF EQUATORIAL WAVES IN THE LOWER STRATOSPHERE

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Equatorial waves in the lower stratosphere are thought to be important in driving the QBO and in stratosphere troposphere exchange. Here we present a new method of obtaining a climatology of equatorial waves in reanalysis datasets. The method is used to show annual and interannual variation in the activity of different types of wave at 100hPa, 70hPa and 50hPa for the 15 years of the ERA15 dataset.

As expected, Kelvin waves have the strongest signal throughout and have a clear annual cycle with maximum activity in DJF and minimum activity in SON. Mixed Rossby Gravity waves are also easily detected, with maximum activity in JJA/SON and minimum activity in DJF. Waves with greater meridional structure are detected by the method but their signal is weak compared to Kelvin and Mixed Rossby Gravity waves.

The method could be used to obtain a climatology of waves at other levels in the atmosphere if required.