

A revisit to critical level blocking diagram

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Matsuda et al. (2014) have proposed a new method to obtain a power spectral distribution of gravity waves in a horizontal phase velocity domain from airglow observations. The obtained power spectral distribution can be interpreted as a product of gravity wave source spectrum and wave transmissivity distributions under an assumption without wave dissipation/reflection and wave horizontal propagation. The gravity wave transmissivity depends on the existence of a critical level for the wave, which is determined by background horizontal wind distributions. Taylor et al. (1993) have proposed a critical level blocking diagram which represents a gravity wave transmissivity in a horizontal phase velocity domain. In this talk, the critical level blocking diagram proposed by Taylor et al. (1993) will be revisited, and its amendment will be discussed. In addition, examples of the critical level blocking diagram in some given background horizontal wind distributions will be shown.

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