

Supplementary

The comparison of Hilbert and wavelet spectra

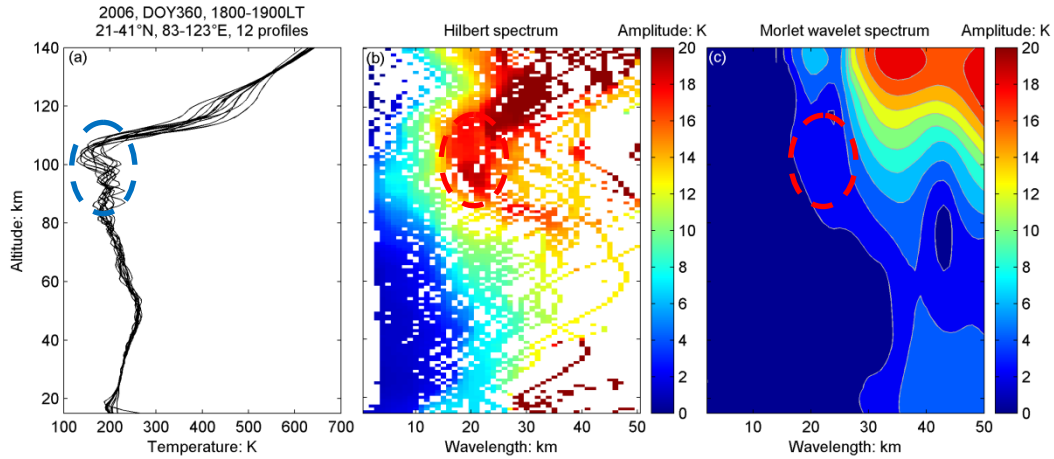


Fig. S1. The comparison of the Hilbert spectrum and Morlet wavelet spectrum. (a) The height profiles are observed on DOY 360, 2006 at 1800-1900 LT in the square area of 21-41°N, and 83-123°E. (b) The Hilbert and (c) wavelet spectra are computed from the one dozen Tn profiles. The blue dash circle denotes the location of vertical wavy structures on the Tn profiles, and the corresponding structure in spectra is denoted by red circles.

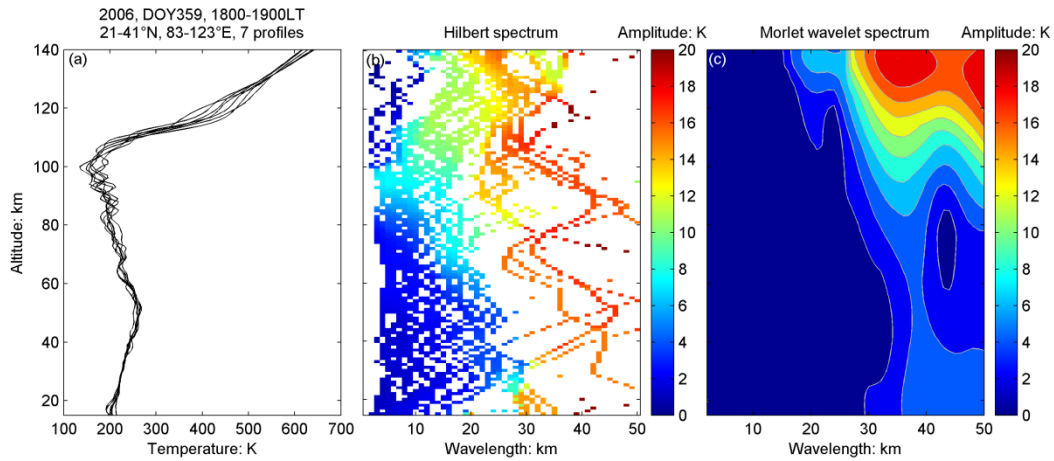


Fig. S2. It is same as Fig. S1., but on DOY 359.

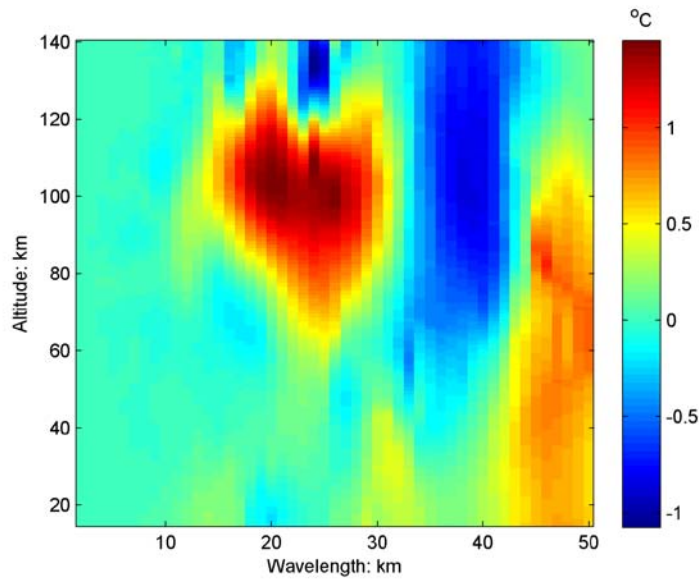


Fig. S3. The difference of Figs S1c and 2c.

Both Hibert and wavelet spectra show that the vertical wavy structures (wavelength about 20-30km, altitude about 80-100km) are stronger in Fig. S1. than in Fig. S2. The reason why we choose the HHT to find the characteristics of the wavy structures is that the HHT can efficiently derive the instantaneous information from the neutral data set.