

# **Spatial-temporal Characteristics of Sensible Heat Variation in China under the Background of Climate Change**

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Energy balance in land surface directly influences the air temperature especially in boundary layer. Figuring out the variation characteristics of sensible heat and latent heat is vital important to understand the mechanism of climate change especially in region scale. In this article, official observation data of 683 Chinese meteorological stations from 1961 to 2010 are utilized to analysis the characteristics of sensible heat variation in China. The results show that in recent 50 years, China's annual average sensible heat tends to be decreased in previous decades and increased dramatically in recent years, and it had a climate abruption around 1970s. Sensible heat shows significant correlation with the wind speed and the temperature disparity between the surface land and the atmosphere, meanwhile, it is also related to the surface land temperature, air temperature and the atmospheric pressure significantly. Sensible heat variation has periods of 2 to 5 years, 8 to 10 years and around 30 years through EEMD analysis and wavelet analysis. In China, the high-value regions are in the northwest arid and semi-arid zones and the Tibet plateau, and the relative low-value areas located in north and central China.

Key words: sensible heat, climate change, variation characteristics, EEMD