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Abrupt Change in the First Tropopause Height over Xinjiang in 1960-1999

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摘要

关键词 [the first tropopause height](#) [change trend](#) [analysis of abrupt change](#)

分类号

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Abstract Based on the 1960-1999 daily radiosounding data from twelve stations in Xinjiang, which is divided into four sub-areas, the Altai Mountains, the northern and southern slopes of Tianshan Mountains and the Kunlun Mountains by climate features and latitude distribution, trends of the annual mean heights and spatial differences of the first tropopause in the past 40 years were analyzed, and tests of the abrupt change of mean heights conducted by Mann-Kendall and successive running t-test. The results showed that there was an overall increasing trend of mean height for the first tropopause over Xinjiang during 1960-1999, in particular during 1987-1999. From the view of the interdecadal change, the mean height obviously decreased from the 1960s to the early 1970s, and afterwards gradually increased with an accumulated height increment more than 100 m. The successive running t-test showed that a remarkable abrupt change of mean height occurred in the Altai Mountains in 1972, the southern slopes of the Tianshan Mountains in 1976, and the northern slopes in 1979, but no remarkable change happened in the Kunlun Mountains. The mean height obviously increased all over Xinjiang except the Kunlun Mountains. Although there were various differences in four sub-areas of Xinjiang, the increasing trend of mean height was rather consistent from the end of 1980s to 1999 over Xinjiang.

Key words [the first tropopause height](#) [change trend](#) [analysis of abrupt change](#)

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