

# **Mean mesopause temperature measurements by Wuhan meteor radar and their comparisons with SABER**

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The mesopause is the coldest region in the earth atmosphere. Many phenomena such as PSME(Polar Summer Mesopause Echo) of VHF radar and noctilucent cloud are related to the cold mesopause. The temperature information for this region mainly comes from lidar observation and satellite missions. Recent several papers have demonstrated how meteor radars can be utilized to measure temperatures around the mesosphere. According to the newly developed mean temperature gradient estimated from SABER observation, using the meteor radar observation from 2002 to 2005 in Wuhan, the temperature in mesopause has been estimated. The results show that the temperatures at mesopause are lower in summer than other seasons. The minimum temperature is about 170K in June. The variations of the temperature with month were almost the same as those of SABER mean temperature. The differences between the temperatures estimated by meteor radar and SABER mean temperature are less than 20K. In many months, the temperatures by meteor radar are quit closed to the SABER temperatures.