



## **Observation of horizontal divergence at low latitude from multiple meteor radars based on SVVP method**

You Yu and Wan Weixing

Institute of Geology and Geophysics, Chinese Academy of Sciences, Beijing, China (yuyou@mail.iggcas.ac.cn)

Low latitude horizontal divergence in the mesosphere and lower thermosphere (MLT) region are presented from multiple meteor radars using the SVVP method. Multi-years dataset of the radial velocity in the altitude range of 80-100 km is observed from two low-latitude stations with distance of 123 km. We first derive the horizontal winds in each 1hr and 2 km bin at each station using the traditional method. Both volume velocity processing (VVP) and step volume velocity processing (SVVP) are then used to get the 3D distribution of the background winds especially their horizontal structures around these two stations with radius of  $\sim 300$  km and in the MLT region with higher horizontal resolution, taking advantage of the combined horizontal sampling observed by the two stations. Gradient terms of the horizontal winds are also obtained and their detailed local time, day-to-day and seasonal variations of the horizontal divergence, relative vorticity, and the stretching and shearing deformation at different altitudes are further studied. Comparing with the traditional method, the SVVP method is proved to be more stable and sensitive during obtaining the background winds and horizontal divergence.