

# **Relationship between tropical tropopause and tropical easterly jet streams over the Indian Monsoon Region**

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Cold point tropopause (CPT) plays very important role for entry the stratospheric water vapour and hence on the climate variability. However, its variability governed by complex process and fully has been not understood. In the Indian summer monsoon season, tropical easterly jet (TEJ) streams are a dominant phenomenon in the upper troposphere. Present study is focused to establish the relationship between CPT and TEJ. High resolution GPS radiosonde data observed at tropical station, Gadanki (13.45 N 79.2 E) during 2006-2014 is utilized. One of the important roles of the Indian summer monsoon on the tropopause is that CPT-H is found to be less variable and lies within  $\pm 0.5$  km when compared to winter season on day-to-day scale. From day-to-day variability of the CPT-H and TEJ-H, it is observed that sometimes they occur near to each other for a few days and sometimes they were widely separated. It is found that CPT and TEJ occur together during active monsoon while they are far apart during break monsoon. Further correlation analysis estimated for the period 2006-2014 suggests that the CPT-H and TEJ-H are positively correlated (0.53) during active periods while during break period there is no relation between CPT-H and TEJ-H are found. Interesting results obtained in this study will be presented and discussed during the workshop.

**Keywords:** Cold point tropopause, Tropical easterly jet streams, Stratospheric and tropospheric exchange process, Active and break monsoon.