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Spatial and temporal analysis of deep convection activity over Tibetan plateau and the Himalayan Mountain region.

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We investigate the deep convection activity over the Himalayan Mountain (HM) and Tibetan Plateau (TP) using long-term lightning and precipitation data sets. The observational data suggest that lightning activity during the months of May & June is greater in comparison with the rest of the year. Since lightning events are treated as a signature of deep convection, those periods can be classified as deep convective periods. In addition, Eastern HM shows high deep convection activity during March-April and Western HM during September-October. The Southern TP faces maximum disturbance during June-August mainly during afternoon hours 12:00-16:00 Local Time (LT). Whereas over Eastern and Western HM region peak hours are between 22:00-04:00 LT and 15:00-20:00 LT, and Central HM peaks are between 14:00-19:00 LT. We further report the relation between changing planetary boundary layer (PBL) and water vapor (WV) transport during deep convection events at seasonal and diurnal scales over TP and HM.