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## Quantifying Contributions from Different Physical Processes to the Atmospheric Warming over the Tibetan Plateau

**Yuying Wei** and Yuwei Wang

Frontier Science Center for Deep Ocean Multispheres and Earth System (FDOMES) and Physical Oceanography Laboratory, Ocean University of China, Qingdao, China

The Tibetan Plateau (TP), known as Earth's "Third Pole", has experienced significant warming since 1980. As an important component of the summer monsoon, the TP rapid warming profoundly impacts both Asian and global climate systems. While previous studies focused on surface temperature, our research uses multiple reanalysis datasets to investigate atmospheric temperature changes over the TP. All three reanalysis datasets revealed an upper tropospheric warming above the TP centered around 250 hPa. The upper tropospheric warming rate is approximately 0.3 K/decade over the 1980-2021 period, faster than those at the same latitude. An energy budget analysis is performed to attribute this warming to different processes. The primary contribution arises from the convection process, contributing around 0.4K/decade. Cloud warms the upper troposphere by an additional 0.2K/decade. Other radiative processes and adiabatic processes play counterpart roles that weaken the upper tropospheric warming. The warming center is most significant in spring. In contrast to other seasons, warming in spring primarily results from the adiabatic process, rather than the convection process. Although different in specific values, all three reanalysis datasets show a similar contribution ratio of each physical process.