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The first year observations of STEAM Project

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The stratosphere and troposphere exchange experiment over Asian summer monsoon (STEAM) is a five-year field campaign project sponsored by Chinese Academy of Science (CAS) to improve the understanding of the chemical and dynamical processes in the upper troposphere and lower stratosphere (UTLS) over the Asian summer monsoon region. Ground based lidar systems, research soundings, stratospheric balloons and un-manned aircraft will be conducted to measure the vertical distribution with sounding water vapor, ozone, aerosol, Aircore measurement of trace gases in Tibetan Plateau, Inner Mongolia, and other stations from 2018 to 2021.
In 2018, STEAM project organized the first field campaign over Tibetan Plateau, which included the Ground based lidar systems-APSOS, research soundings, stratospheric balloons. The STEAM project launched more than 20 soundings from July to August, which acquired the profiles of aerosol, water vapor, ozone concentration and the profiles of trance gases. With the stratospheric balloons, the enhanced aerosol layer were observed in the UTLS region over Golmud in Qinghai province. The GHGs gas profiles were measured by AirCore system on June and November in Inn Mongolia, which showed the the transport processes over PBL, free troposphere and UTLS region, and the data had been applied to validate the satellite observations.