

The Third Pole Environment Programme (TPE): A new base for the processes study of atmospheric physics and environment over the Tibetan Plateau and surrounding regions

Yaoming Ma

Chinese Academy of Sciences, Institute of Tibetan Plateau Research, Beijing, China (ymma@itpcas.ac.cn)

The Tibetan Plateau, with the most prominent and complicated terrain on the globe and an elevation of more than 4000 m on average above sea level (msl), is often called the “Third Pole” due to its significance parallel with Antarctica and the Arctic. The exchange of energy, water vapor and some greenhouse gases between land surface and atmosphere over the Tibetan Plateau and the surrounding regions play an important role in the Asian monsoon system, which in turn is a major component of both the energy and water cycles of the global climate system. Supported by the Chinese Academy of Sciences and some international organizations, a Third Pole Environment (TPE) Research Platform (TPEP) is now implementing over the Tibetan Plateau and surrounding region. The background of the establishment of the TPEP, the establishing and monitoring plan of long-term scale (5-10 years) of the TPEP will be shown firstly. Then the preliminary observational analysis results, such as the characteristics of land surface heat fluxes, CO₂ flux and evapotranspiration (ET) partitioning (diurnal variation, inter-monthly variation and vertical variation etc), aerosol optical properties between southern and northern sides of the Himalayas, the characteristics of atmospheric and soil variables, the structure of the Atmospheric Boundary Layer (ABL) and the turbulent characteristics have also been shown in this study.