



Study on the atmosphere-land interaction over heterogeneous landscape of the Mt. Qomolangma (Mt. Everest) area

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The mountains of Himalayas are the important channels for the mass exchange between surface layer of Northern Hemisphere and troposphere atmosphere. The mountains relate surface layer atmosphere over the Tibetan Plateau and the above free atmosphere through many atmospheric circulation systems including mountain-valley wind and glacier wind etc. Mt. Qomolangma (Everest) is the highest peak in the world, and its nearby region is a representative case of mountains of Himalayas. Firstly the background of the establishment of the Atmospheric and Environmental Comprehensive Observation and Research Station on Mt. Qomolangma, Chinese Academy of Sciences (AECORSQ, CAS), the role of the station in the study of the atmosphere-land interaction over Himalayas area and the instruments layout of the AECORSQ, CAS was introduced in this paper. Then the preliminary observational analysis results, such as the characteristics of air temperature, pressure, air humidity, wind speed and wind direction, the structure of the Atmospheric Boundary Layer (ABL), the atmospheric turbulent characteristics and the energy exchange between the land surface and surface layer atmosphere, were shown. The different characteristics of atmosphere-land interaction among the pre-monsoon, inside-monsoon and post-monsoon were also presented in this paper.