



Monitoring sensible heat flux over urban areas in a high-altitude city using Large Aperture Scintillometer and Eddy Covariance

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Urbanization leads to modifications of surface energy balance which governs the momentum, heat and mass transfer between urban canopy layer and the atmosphere, thus impacts dynamic processes in the urban ABL and ultimately influence the local, regional and even global climate. It is essential to obtain accurate urban ABL observations to enhance our understanding of land-atmosphere interaction process over the urban area and help to improve the prediction ability of numerical model. However, up to now, there are rarely observations in high latitude cities. In one of the highest cities in the world, Lhasa, Eddy Covariance (EC) measurements have been ongoing since 10 August 2016 and a Large Aperture Scintillometer (LAS) started to work on 12 November 2016, in addition to a UHI network which has been running since 2012. Taking advantage of these observations, this poster will estimate and analyze the surface energy balance in the winter of 2016 in Lhasa, with an emphasis on sensible heat flux. An analytical footprint model and the radiative surface temperature retrieved from Landsat 8 will be employed to compare EC and LAS measurements.