Contribution ID: **85** Type: **Oral presentaion**

Local Structures of Universe from CMB Dipole measurement.

Thursday 9 June 2016 08:45 (15 minutes)

From the observation of cosmic microwave background (CMB), we found the pattern of temperature fluctuation that has variation of one hot pole and one cold pole, i.e. dipole pattern. This indicates our motion relative to the CMB rest-frame, which is also taken to be rest-frame of the universe. From the CMB dipole field, we determine the velocity of the Sun (V) or solar system with respect to CMB to be in the direction of Galactic longitude and latitude $(l, b) = (263\ , 48\ )$,with speed 368 kms^{-1}. But this relation of Sun relative to CMB is the sum of three components. Therefore, we can be decompose it into a sum of local and external components. $V_{Sun\rightarrow CMB} = V_{Sun\rightarrow GC} + V_{GC\rightarrow LG} + V_{LG\rightarrow CMB}$, that $V_{Sun\rightarrow GC}$ is the motion of Sun relative to Galactic center (GC), $V_{GC\rightarrow LC}$ is the motion of Galactic center relative to Local Group (LG) and $V_{LG\rightarrow CMB}$ is the motion of LG relative to CMB rest frame.

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Session Classification: Session XIII

Track Classification: Astronomy, Astrophysics and Cosmology