

U02a Observational Constraints on Cosmology from Modified Friedmann Equation

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Recent measurements of type Ia supernovae as well as other concordant observations suggest that the expansion of our universe is accelerating. A dark energy component has usually been invoked as the most feasible mechanism for the acceleration. However, the effects arising from possible extra dimensions can mimic well the role of a dark energy through a modified Friedmann equation. We investigate observational constraints on this kind of cosmology using various astronomical data, such as angular size-redshift data of high- z radio sources, measurements of type Ia supernovae and X-ray gas mass fractions in clusters of galaxies. We obtain confidence region on the model parameters from a combined analysis, which leads to very stringent constraints on this scenario.