Contribution ID: **95**   Type: **Oral**

Fitting Function for Quintessence Dark Energy

Thursday, 5 December 2019 16:30 (15 minutes)

The true nature of dark energy remains largely unknown. In search of an alternative to the cosmological constant, several classes of theoretical models utilise scalar fields in an attempt to achieve accelerated expansion of the universe. On the experimental front, upcoming large scale structure surveys, such as Euclid and SKA, will provide high precision power spectrum data on a wide range of length scales. The challenge now is how to analyse and fit the data. To avoid the enormous computational overhead of N-body simulations, we constructed a fitting function for dark energy. In this work, we follow the RelFit formalism presented by Hannestad and Wong (2019), demonstrating that it can be applied to a large class of scalar field dark energy models. Ultimately this allows MCMC analysis to be done without the need for large computation facilities.

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Session Classification: Parallel

Track Classification: Cosmology