Contribution ID: **246** Type: **Oral**

Non-linear regression with errors on both axes and its implications on Hubble tension.

While fitting a non-linear model to data, it is common to consider errors only in the dependent variable and treat other variables as perfectly measured. A more flexible model fitting considering errors in independent variables is expected to better estimate the parameters of the model from the same data. We employ a Bayesian method to consider redshift errors in the Pantheon sample of Type-Ia supernovae, and find that it improves the ΛCDM fit to the data. We are investigating the implications of this method on cosmological tension in the value of Hubble constant H_0 with presently available data and with simulated data of larger volume and better quality expected to be available in the future.

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Session Classification: Cosmology

Track Classification: Cosmology