



Contribution ID: 56

Type: **Early Career Scientist**

(zoom) Joint Modelling of Astrophysical Systematics for Cosmology with LSST

Thursday, 23 February 2023 16:25 (5 minutes)

The future of cosmology looks bright: several ground and space telescopes being built, thousands of people coming together in an effort to uncover the riddles of dark matter and dark energy. No one can deny the wealth of data that these detectors will bring. However, it would be beneficial to examine if our strategies and analysis choices will help answer fundamental questions. In this rush to find the answers, it would be good to re-evaluate our strategies. These assessments have to be applied to every facet of research. In this talk I would like to raise (and answer) several questions I believe we should be asking ourselves: Do we have enough cross-pollination efforts between the collaborations? How good and up-to-date are our computing protocols? What biases are hidden or overlooked in our modelling choices? Can we get some physics insight from already-existing data and steer our future analyses into different directions?

One step towards answering these questions is the LSST DESC project, where we are trying to understand the underlying physics through a joint modeling approach to systematics. The outcome of this investigation will provide, not only more rigorous constraints on the cosmological parameters, but also provide a deeper understanding if there exists a degeneracy between the parameters used in our models. If such degeneracies exist, we will be able to use them to pave the path towards a better understanding of the Universe.

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Session Classification: Open Session for Remarks and Discussions