



Contribution ID: 85

Type: **Oral Presentation**

PROBING THE REIONIZATION EPOCH WITH THE SIMONS OBSERVATORY

Reionization was a very critical process in the Universe in the transition from an opaque to a transparent Universe. However, we do not fully understand how this event happened. Using the kinetic Sunyaev-Zel'dovich Effect (kSZ), we can look critically into the reionization epoch of the Universe. This work predicts how well we can constrain cosmological parameters using forecasted data from the Simons Observatory (SO), to explain the transition from dark matter to stars. We use the model developed by Alvarez et. al. to test whether we can determine the shape of the kSZ spectrum from patchy reionization. Using different specifications for SO, we find the best configuration of telescope parameters that provide tight constraints on the cosmological parameters.

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Session Classification: Astrophysics & Cosmology

Track Classification: Astrophysics and Cosmology