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## **CMB as backlight: Deeper look into galaxy clusters with lensing and SZ effects**

*Thursday, 8 July 2021 17:00 (18 minutes)*

The cosmic microwave background (CMB) acts as a backlight to the entire observable universe, and the ideas for using its distortion signatures, imprinted upon by the intervening large-scale structure, are an endless source of astrophysical probes that are limited only by our experimental reach. I review some of the ideas collected while responding to ESA's Voyage 2050 proposal call, specifically focusing on lensing and SZ effect probes related to the study of galaxy clusters. Two recent examples that we have worked on are: an improved method for cluster mass reconstruction with CMB-lensing using a simple map-based technique, and the prospect of constraining the average magnetic field within galaxy clusters using nonthermal SZ effect measurements.

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**Session Classification:** New Horizons in Cosmology with CMB Spectral Distortions

**Track Classification:** Cosmic Microwave Background: New Horizons in Cosmology with CMB Spectral Distortions