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Optimization of Mapper of the IGM Spin Temperature (MIST) Antenna Parameters

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The Mapper of the IGM Spin Temperature (MIST) instrument is a planned radio telescope that will be installed in Chile next year. MIST consists of one dipole antenna that will explore the Early Universe in the 50–120 MHz frequency band. Previous observations done by the EDGES collaboration have sparked claims of a positive detection of the 21-cm absorption feature of primordial hydrogen at $z=17$ in the Epoch of Reionization. MIST seeks to improve upon the EDGES instrument in terms of removing undesired antenna gain chromaticity and elevation angle dependence. In this talk we will show early results of antenna parameter optimization which show that the claimed EDGES detection can be confirmed or ruled out when MIST is deployed.

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