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Characterization of Cosmic Dawn through Observations of the Redshifted 21-cm Line RAUL MONSALVE, JUDD BOWMAN, THOMAS MOZDZEN, Arizona State University, ALAN ROGERS, Massachusetts Institute of Technology — One way of tracking the formation of the first generations of compact objects in the Universe during the period of Cosmic Dawn (40 > z > 6) is through observations of the 21-cm line emitted by neutral atomic hydrogen (HI) in the intergalactic medium due to the hyperfine splitting of its ground state. Models have been developed for this observable and precise estimation of their parameters would allow constraining the fundamental physics of structure formation in the early Universe. The cosmological HI signal was emitted at ~ 1.4 GHz but its detection is expected in the VHF range (between 40 and 200 MHz) due to cosmic expansion. The models suggest that the signal is extremely weak, about four orders of magnitude weaker than the relevant foregrounds, making its detection a daunting endeavor. This talk will describe EDGES (*Experiment to Detect the Global EoR Signature*), an instrument developed by Arizona State University and MIT currently operating in the desert of Western Australia. It attempts to detect the large-scale HI signal from Cosmic Dawn following a single-antenna approach and relying on extremely accurate calibration. The talk will present data recently taken, will describe the processing pipeline, and will discuss the status of the science analysis.

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