ADDRESSING FOREGROUNDS AND SYSTEMATICS FOR IMAGING THE 21CM REIONIZATION SIGNAL

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As the Hydrogen Epoch of Reionization Array (HERA) is beginning first science observations targeting the 21cm power spectrum during the Epoch of Reionization, it is worthwhile to begin thinking about what we might expect a next-generation instrument to accomplish. I will argue that cross-correlation statistics between multiple probes of the high-redshift universe have compelling scientific potential, and that to support this, next-generation 21cm intensity mapping experiments must find a way to access the cosmological signal and retain phase information. Unfortunately, this will require a new approach to managing foreground contamination and instrumental systematics. I will outline the calibration requirements for directly imaging cosmic reionization with the 21cm line, suggest some promising techniques, and summarize where the field needs to direct its efforts over the next few years in order to build on current capabilities.