Environmental Systematics and the Impact on 21-cm Epoch of Reionization Measurements

by

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Lily R. Whitler

A Thesis Presented in Partial Fulfillment of the Requirements for the Degree Bachelor of Science with Honors

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Abstract

1. Introduction

1.1. The Epoch of Reionization

Morales & Wyithe (2010)

Pritchard & Loeb (2012)

1.2. The 21-cm Power Spectrum

1.3. The Hydrogen Epoch of Reionization Array

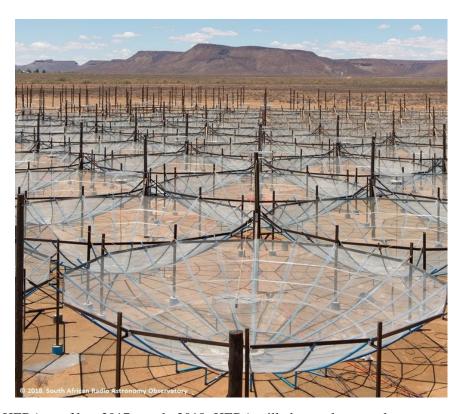


Figure 1. HERA as of late 2017 – early 2018. HERA will observe large-scale structure prior to and during the EoR via the redshifted 21-cm line from the intergalactic medium. Image courtesy of the South African Radio Astronomy Observatory.

DeBoer et al. (2017)

1.4. Radio Frequency Interference

2. Methods

- 2.1. RFI Excision Strategies
- 2.2. Calculating the Power Spectrum
 - 2.3. Modelling HERA Data
 - 3. Results
 - 4. Conclusion
 - 5. References

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