

# 国台学术报告 NAOC COLLOQUIUM

2012 年 第 07 次 / Number 07, 2012

**TIME: Wednesday, 3:00 PM, Feb. 29, 2012**      **LOCATION: A601 NAOC**

## Optimal Analysis of of 21cm Intensity Mapping Experiments

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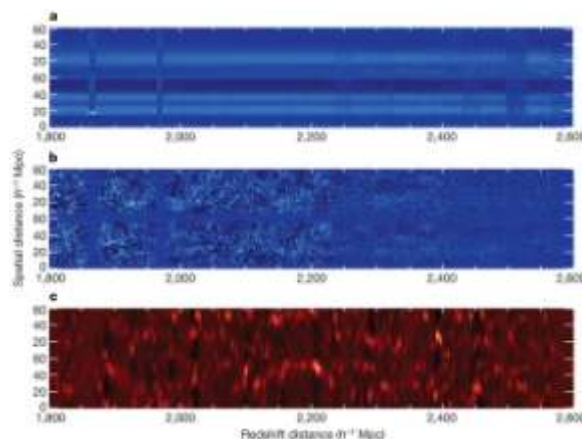
**Canadian Institute for Theoretical Astrophysics**



Richard Shaw is a Postdoctoral Fellow at the Canadian Institute of Theoretical Astrophysics (CITA) in Toronto. He currently works in 21cm Cosmology and is primarily interested in how to analyse the next generation of experiments. Prior to his arrival at CITA he was a PhD student at the Institute of Astronomy in Cambridge, working with Antony Lewis on a broad range of topics in CMB cosmology and Large-Scale Structure.

### Abstract

21 cm intensity mapping is a novel technique aiming to probe cosmic structure at redshift  $z \sim 1-3$ , with the promise of constraining dark-energy physics through precise measurements of the Baryon Acoustic Oscillations. However, contamination from astrophysical sources, both in our own galaxy and beyond, pose a significant observational challenge to any such program.



After an overview of the field, I will briefly introduce a new method for the analysis of data from such experiments that is both robust to significant uncertainty in the foreground structure, and statistically explicit about the information loss associated with the foreground removal. In addition, this method allows detailed and realistic forecasts of the performance of transit experiments, such as the Canadian Hydrogen Intensity Mapping Experiment (CHIME), and it is in the context of such telescopes I discuss this work.

*All are welcome! Tea, coffee, biscuits will be served at 2:45 P.M.*

You are welcome to nominate speakers to Shude Mao ([shude.mao@gmail.com](mailto:shude.mao@gmail.com)), Licai Deng ([licai@bao.ac.cn](mailto:licai@bao.ac.cn)), Xuelei Chen ([xuelei@cosmology.bao.ac.cn](mailto:xuelei@cosmology.bao.ac.cn)).