
MEASURING GIANTS USING COSMIC MICROWAVE BACKGROUND LENSING

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Requirements of the Degree of Doctor of Philosophy*

Statement of contribution:

This is to certify that:

- This thesis entitled TITLE the thesis comprises only their original work towards the degree of Doctor of Philosophy.
- Due acknowledgement has been made in the text to all other material used.
- The thesis is less than 100,000 words in length, exclusive of tables, maps, bibliographies, and appendices.

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Chapter 1

Introduction

Expanding Universe

- Explain cosmological principle and hubble's law
- FLRW metric, $a(t)$ at various epochs in the universe
- Ending with supernovae and dark energy

CMB

- Epoch of recombination
- CMB power spectrum
- CMB secondary anisotropies (introduce tSZ and CMB lensing)

Λ CDM cosmology

- Explain different cosmological parameters and probes

Galaxy Clusters

- Introduction to galaxy clusters
- Clusters as Cosmological Probes
- Difficulty with mass estimation
- Measuring mass of Galaxy clusters using CMB lensing.

Chapter 2

Data

South Pole Telescope

- Explain the location and specifications of the telescope
- Briefly describe SPT-SZ, SPTpol and SPT-3g
- Map making

Dark Energy Survey

- Introduction to DES
- Redmapper catalog

Chapter 3

Data Analysis

Appendix A

Appendix A

A.1 Section in an appendix

This is an appendix chapter.