INTER-UNIVERSTITY CENTRE OF ASTRONOMY AND ASTROPHYSICS

Interplay of galaxy formation and the evolution of dark matter haloes in the cosmic web

A thesis submitted in partial fulfillment for the degree of Doctor of Philosophy

by

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supervised by

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in the

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to

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Declaration of Authorship

I, Premvijay Velmani, declare that this thesis titled, 'Interplay of galaxy formation and the evolution of dark matter haloes in the cosmic web' and the work presented in it are my own. I confirm that:

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Abstract

Inter-Universtity Centre of Astronomy and Astrophysics

Doctor of Philosophy

by Premvijay Velmani

The Thesis Abstract is written here (and usually kept to just this page). The page is kept centered vertically so can expand into the blank space above the title too...

Acknowledgements

The acknowledgements and the people to thank go here, don't forget to include your project advisor...

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Abbreviations

LAH **L**ist **A**bbreviations **H**ere

Physical Constants

Speed of Light $c = 2.997\ 924\ 58 \times 10^8\ \mathrm{ms}^{-\mathrm{S}}$ (exact)

Symbols

a	distance	m
P	power	W (Js^{-1})
ω	angular frequency	$rads^{-1}$

For/Dedicated to/To my...

Chapter 1

Introduction

In the standard paradigm of the ΛCDM cosmology, dark matter haloes are formed from the gravitational collapse around initial overdensities - Galaxies are then formed the baryonic matter within the haloes - dark halo response to the galaxy formation - literature on adiabatic relaxation.

1.1 Quasi-adiabatic relaxation

1.2 Self-similar evolution

[**?**]

1.3 Hydrodynamical simulations

1.4 Dynamical relaxation

1.5 Outline

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2.1 Introduction

2.2 Quasi-adiabatic relaxation

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Chapter 5

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6.3 Future directions

Appendix A

An Appendix

Bibliography

[] Erwin T. Lau, Daisuke Nagai, Camille Avestruz, Kaylea Nelson, and Alexey Vikhlinin. Mass Accretion and its Effects on the Self-similarity of Gas Profiles in the Outskirts of Galaxy Clusters. , 806(1):68, June 2015. doi: 10.1088/0004-637X/806/1/68.