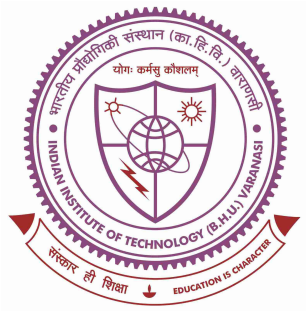
# Using gravitational lensing to probe distribution of neutral hydrogen in the post-reionization Universe




**THESIS SUBMITTED**

**FOR THE AWARD OF**

**DOCTOR OF PHILOSOPHY**

in

**PHYSICS**

*by*

**URVASHI**

*DEPARTMENT OF PHYSICS*

**INDIAN INSTITUTE OF TECHNOLOGY**

**BANARAS HINDU UNIVERSITY**

**VARANASI - 221 005**

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17171001

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It is further certified that the student has fulfilled all the requirements of Comprehensive Examination, Candidacy and SOTA for the award of Ph.D. Degree.

**Date:** 21/07/22

**Place:** varanasi

**Supervisor** Prasun Dutta

**Dr Prasun Dutta**
**Assistant Professor**
**Department of physics**
**IIT(BHU) Varanasi**

Dr. Prasun Dutta
Assistant Professor
Department of Physics
IIT (BHU), Varanasi
Varanasi. PIN 221005

# Declaration

I, **Urvashi**, certify that the work embodied in this thesis is my own bonafide work and carried out by me under the supervision of **Dr. Prasun Dutta** from July 2017 to July 2022 at the **Department of Physics**, Indian Institute of Technology (BHU), Varanasi. The matter embodied in this thesis has not been submitted for the award of any other degree/diploma. I declare that I have faithfully acknowledged and given credits to the research workers whenever and wherever their works have been cited in my work in this thesis. I further declare that I have not wilfully copied any other's work, paragraphs, text, data, results, *etc.*, reported in journals, books, magazines, reports dissertations, theses, *etc.*, or available at websites and have not included them in this thesis and have not cited as my own work.

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It is certified that the above statement made by the student is correct to the best of my knowledge.

**Supervisor**
Prasun Dutta
**Dr Prasun Dutta**

**Dr. Prasun Dutta**
Assistant Professor
Department of Physics
IIT (BHU), Varanasi
Varanasi, PIN 221005

**Head of the Department**
HEAD/विभागाध्यक्ष
भौतिकी विभाग/Deptt. of Physics
भा०प्रौ०सं०/(का०हि०वि०)/IIT (BHU)
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**In the honour**

**of**

**My Parents**

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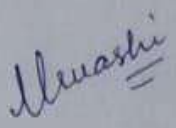

**Urvashi**
**Department of physics**
**IIT(BHU) Varanasi**

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