

## **Dr Prabwal Jyoti Phukon**

*Assistant Professor  
Department of Physics  
Dibrugarh University, Dibrugarh  
Assam 786004*

### **CAMPUS ADDRESS:**

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### **PERMANENT ADDRESS:**

Konwer Dehingia Village,  
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### **PERSONAL DETAILS:**

Father's name: **Late Munindranath Phukon**  
Mother's Name: **Mrs. Bonti Phukon**  
Date of birth: **17-02-1987**  
Place of birth: **Sivasagar, Assam, India.**  
Marital status: **Married**  
Nationality: **Indian**

### **Work Experience:**

Assistant Professor,  
Department of Physics, Dibrugarh University.  
Date of Joining : 03/11/2014.  
Duration: 8 Years, 6 Months.

### **EDUCATION:**

#### **Post-Doctoral Work.**

High Energy Physics-Theory Group, Institute of Physics, Bhubaneswar.  
(June 2014-October 2014)

#### **Ph.D. in Physics ( 2014)**

Indian Institute of Technology, Kanpur, India  
Course-work CPI: 8.86 on a 10.0 scale

**Research Area:** Superstring theory and related topics.

**Thesis Title:** Studies on the Physics of branes: from the bulk to the boundary.

**Thesis Advisor:** **Dr. Tapobrata Sarkar**

Professor, Department of Physics, IIT Kanpur, India 208016.

### **Master of Science in Physics, 2010**

(Under M.Sc.-PhD dual degree programme)  
Indian Institute of Technology, Kanpur, India  
Graduated with a CPI of 8 on a 10.0 scale.

### **Bachelor of Science with Physics Major (Chemistry, Mathematics as Pass course), 2007**

Cotton College, Guwahati under Gauhati University.  
Ranked 1<sup>st</sup> class 3<sup>rd</sup> with 77.8 % marks.

### **Higher Secondary School Exam (Class XII), 2004**

Demow H.S. School, Sivasagar under AHSEC.  
Secured 1<sup>st</sup> division (84.6%) with Physics (92), Chemistry (91), Mathematics(80),  
English (80) and Assamese(80).

### **H.S.L.C (Class X), 2002**

Demow H.S. School, Sivasagar under SEBA.  
Secured 1<sup>st</sup> division with 88.83% .  
(English-92, General Mathematics-96, Advanced Mathematics-94, General Science-91,  
Social Studies-83 and Assamese-77).  
**Ranked 7<sup>th</sup>** among the board students.  
**Secured highest marks in English (92)** among the board students.

### **HONORS & AWARDS:**

- a) **Ranked 7<sup>th</sup>** among the board students in HSLC 2002 by SEBA with highest marks in English (92/100).
- b) **JAM 2007(Joint Entrance Examination for M.Sc in IIT's): All India Rank 97.**
- c) **CSIR Junior Research Fellowship, September, 2009 (Exam held in December 2008).**

### **RESEARCH PUBLICATIONS:**

1. Naba Jyoti Gogoi, **Prabwal Phukon**, *Topology of thermodynamics in R-charged black holes*, **Physical Review D** (Accepted for publication on 24<sup>th</sup> April, 2023, currently in production, to appear shortly. **Scopus Indexed. Impact Factor: 5.407**).
2. Naba Jyoti Gogoi, Gunindra Krishna Mahanta, **Prabwal Phukon**, *Geodesics in geometrothermodynamics (GTD) type II geometry of 4D asymptotically anti-de-Sitter black holes*, **The European Physical Journal Plus (EPJP)**, (2023) 138:345. (**Scopus Indexed. Impact Factor: 3.758**).
3. Naba Jyoti Gogoi, **Prabwal Phukon**, *Thermodynamic geometry of 5D R-charged black holes in extended thermodynamic space*, **Physical Review D** 103, 126008 (2021). (**Scopus Indexed. Impact Factor: 5.407**).
4. Subhash Mahapatra, **Prabwal Phukon**, Tapobrata Sarkar, *Generalized Superconductors and Holographic Optics*, **Journal of High Energy Physics (JHEP)**, 01(2014) 135. (**Scopus Indexed. Impact Factor: 6.376**).

5. **Prabwal Phukon and Tapobrata Sarkar**, *R- charged black hole and Holographic optics*, **Journal of High Energy Physics (JHEP)**, 09(2013) 102. (Scopus Indexed. Impact Factor: 6.376).
6. Prashant Kumar, Subhash Mahapatra, **Prabwal Phukon**, Tapobrata Sarkar, *Geodesics in Information Geometry : Classical and Quantum Phase Transition*, **Phys. Rev. E** 86, 051117 (2012). (Scopus Indexed. Impact Factor: 2.707).
7. **Prabwal Phukon**, Tapobrata Sarkar, *On the Higgsing and Un-Higgsing of Fano-3 folds*, **Journal of High Energy Physics (JHEP)**, 01 (2012) 90. (Scopus Indexed. Impact Factor: 6.376).
8. Subhash Mahapatra, **Prabwal Phukon**, Tapobrata Sarkar, *Black hole entropy corrections in the grand canonical ensemble*, **Physical Review D**, 84, 044041 (2011). (Scopus Indexed. Impact Factor: 5.407).

### Invited Talks and As a Resource Person

1. Delivered an *Invited Lecture* on “*Thermodynamic geometry of AdS black holes in various ensembles*” in the National Conference on Emerging Trends in Physics (NCETP 2021) held on 16 June, 2021, organized by Department of Physics, Tezpur University.
2. Delivered an *invited talk* titled “*Introduction to Thermodynamic Geometry*” in the two days Symposium on Particle Physics and Related Topics, organized by the Department of Physics, Assam Don Bosco University during 28 – 29 October, 2021.
3. Invited and delivered a talk as a *Guest Scientist* for *Interaction with Scientists programme* in “*27<sup>th</sup> State Level Children Science Congress*” held at Tinsukia on 1<sup>st</sup> of November, 2019.
4. Invited and delivered a talk as a *Resource Person* for *Grooming and Mentoring Programme, 2019 (Phase II)* organized by Mankata High School in Association with ASTEC, Assam, supported by DST, Government of Assam held from 16<sup>th</sup> -22<sup>nd</sup> October, 2019.
5. Conducted *Proficiency Classes on Physics on account of the Induction Programme* for the newly enrolled B.Tech. students of Dibrugarh University Institute of Engineering and Technology, Dibrugarh on 13<sup>th</sup> and 14<sup>th</sup> August, 2019.

### Professional Development Programs Attended

1. Participated in the four weeks *Refresher Course in Physical Science/ Nano Science* organized by **HRDC, Jawaharlal Nehru University, New Delhi** during 27-08-2018 to 20-09-2018.
2. Participated in the *41<sup>st</sup> Orientation Programme* organized by **HRDC, North Eastern Hill University, Shillong** during 22-05-2017 to 18-06-2017.
3. Participated in the *One Week Short Term Course on Computer Programming in Physics* organized by **Department of Physics, Dibrugarh University** during 1-08-2019 to 7-07-2019.

## **Selected Visits, Conferences and Workshops attended:**

1. Attended **National Strings Meeting (NSM)- February 2009**, held at Indian Institute of Technology, Bombay.
2. Attended **National Strings Meeting (NSM)-December 2011**, held at Delhi University, New Delhi.
3. Participated in **6<sup>th</sup> Asian Winter School on Strings, Particles and Cosmology - January 2012**, held at **Kusatsu, Japan**. A brief presentation on ``**Higgsing of Fano-3 theories**'' was made.
4. Attended **Advanced Strings School -October 2012**, held at Puri.
5. **Attended Indian Strings Meeting (ISM) -2012**, held at Puri. A short talk on ``**Optical properties of R-charged black holes** '' was delivered.
6. Attended **National Strings Meeting (NSM)-2013**, held at IIT, Kharagpur. A talk titled ``**R-charged black holes and holographic optics** '' was delivered.
7. Visited **Institute of Physics, Bhubaneswar** (February 2014), **Institute of Mathematical Science** , Chennai (February 2014), **Indian Institute of Science**, Bangalore (March 2014) and **IISER, Bhopal** (March 2014) and **delivered talks on doctoral work**.
8. Attended Xth **Biennial Conference of Physics Academy of North East** on the theme *Recent Advances in Physics Research and its Relevance*, organized by Department of Physics, St. Anthony's College, Shillong from 10<sup>th</sup> to 12<sup>th</sup> of November, 2016 and presented a paper titled *Thermodynamics of Dyonic Black Holes in Canonical, Grand-canonical and Mixed Ensembles*.

## **Research Supervision:**

### **PhD Students currently enrolled:**

1. **Naba Jyoti Gogoi** ( Working on *Thermodynamic and topological studies on AdS black holes*. Expected to submit his thesis by December, 2024).
2. **Abhishek Baruah** (Working on *Holographic studies on AdS black holes*. Expected to submit his thesis by June, 2025).
3. **Amijit Bhattacharya** (Currently undergoing PhD Course Work).
4. **Bidyut Hazarika** (Currently undergoing PhD Course Work).

### **M.Phil. Students (Awarded):**

1. Naba Jyoti Gogoi (*Thermodynamic Geometry of 5D R-charged Black Holes in Extended Thermodynamic Space*, 2020).
2. Manash Jyoti Saikia (*Thermodynamic Geodesics and Phase Behavior of of 4-dimensional Dyonic AdS Black Hole*, 2019).
3. Bhargav Borthakur (*Information Geometry Studies on Dyonic Black Holes*, 2018).
4. Chayanika Chetia (*Thermodynamics of Dyonic Black Holes in Different Ensembles*, 2017).

### **Book Authored:**

1. **Sarvasamiksha Tattva** (Currently in Press, ISBN 978-93-84819-17-0, Publisher: Publication Division, Dibrugarh University).

### **Other Responsibilities:**

1. Editor, **Quarterly R&D Newsletter, Dibrugarh Univeristy.**
2. Local Organizing Committee Member of **CICAHEP**, 2015, **NAMASTA**, 2017, **PMSR**, 2020 organized by Department of Physics, Dibrugarh University.
3. Member of Departmental Management Committee, Department of Physics, Dibrugarh University.
4. Joint Secretary, Dibrugarh University Teachers' Association, 2023.

## References:

**Dr. Tapobrata Sarkar**

(Thesis supervisor)

[tapo@iitk.ac.in](mailto:tapo@iitk.ac.in)

Professor,

Department of Physics

Indian Institute of Technology Kanpur

Kanpur 208016 (India)

**Dr. Gautam Sengupta**

[sengupta@iitk.ac.in](mailto:sengupta@iitk.ac.in)

Professor,

Department of Physics

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**Dr. Kaushik Bhattacharya**

[kaushikb@iitk.ac.in](mailto:kaushikb@iitk.ac.in)

Associate Professor,

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Kanpur 208016 (India)

I hereby declare that the information given above is correct to the best of my knowledge.

Date: 08/05/2023

Prabwal Jyoti Phukon



