

Indian Institute of Technology Ropar  
Rupnagar, Punjab 140001, India.

Mobile: +91 8697015683  
Email: s.chakrabortty@iitrpr.ac.in,  
sankha7@gmail.com.

## PERSONAL INFORMATION

*Date of Birth:* November 17, 1980.

*Marital Status:* Unmarried.

*Languages:* Bengali (Mother tongue), English, Hindi.

## EDUCATION

**Ph.D. Theoretical Physics**, Institute of Physics (IOP), Bhubaneswar, India 2012. (*Official Award Date:* 24.07.2013.)

*Dissertation:* Aspects of Gauge/Gravity duality.

*Advisor:* Sudipta Mukherji.

**M.Sc Physics**, Rajabazar Science College, University of Calcutta, India, 2005.

**B.Sc Physics**, Dinabandhu Andrews College, University of Calcutta, India, 2002.

## RESEARCH EXPERIENCE

### *Current Positions*

**Indian Institute of Technology Ropar, India** : Assistant Professor, December'16 – present.

### *Previous Research Positions*

**Indian Institute of Technology Kanpur, India** : Postdoctoral Fellow, September'16– November'16.

**Van Swinderen Institute for Particle Physics and Gravity University of Groningen, The Netherlands** : Postdoctoral Fellow, July'15 – August' 16.

**Indian Institute for Science Education and Research, Pune, India** : Postdoctoral Fellow, September'14 –December'15.

**Institute of Mathematical Sciences(IMSc), Chennai, India** : Postdoctoral Fellow, December'12 – August'14.

### *Short-Term Visits*

**Institute of Theoretical Physics (ITP), Beijing, China:** December '11.

**Institute for the Physics and Mathematics of the Universe (IPMU), Kashiwa, Japan:** January '12.

**Center for Quantum Space-time (CQUeST), Seoul, South Korea:** February '12.

**Vienna University of Technology, Austria:** October '14.

**Max-Planck-Institut für Gravitationsphysik (Albert-Einstein-Institut), Potsdam, Germany:** November '14.

## RESEARCH AREAS

**Broad Area of Research:** String Theory and Gauge/Gravity Duality.

**Present main interests:** Tensionless string theory, Fluid/Gravity correspondence, Entanglement Entropy, Application of Gauge/Gravity duality in strongly coupled QCD, Non-relativistic AdS/CFT.

## TEACHING EXPERIENCE

*Classical Mechanics: PHL103* : Classical Mechanics course floated to the first year B-Tech students (2016-17).

*Reading Course on Quantum Field Theory and Supersymmetry* : Ongoing reading courses given to the PhD students of Dr. Arjun Bagchi.

*Course on Gravitation* : Ongoing courses given to the PhD students of Dr. Arjun Bagchi.

*Short Course on Green's Function in Physics* (4 Lectures): Post-MSc course in Institute of Physics, Bhubaneswar. 2010.

*Advanced Quantum Mechanics: Teaching Assistant*, Post-MSc course in Institute of Physics, Bhubaneswar, 2008.

## PUBLICATIONS OF SHANKHADEEP CHAKRABORTTY.

### Summary

Total of 14 articles (13 published + 1 in communication).

*Journal of High Energy Physics* (impact factor 6.11): 8.

*Physics Letters B* (impact factor 6.02): 3 (1 singly authored).

*Physical Review D* (impact factor 5.156) : 1.

*Nuclear Physics B* (impact factor 3.95) : 1.

h-index: 7.

Data based on *HEP-Inspire*.

### Refereed Articles in International Journals

1. *Holographic P-wave Superconductors in 1+1 diemensions.*  
Gokhan Alkac, Shankhadeep Chakrabortty, Pankaj Chaturvedi.  
([Weblink](#))
2. *Tensionless Superstrings: View from the Worldsheet*  
Arjun Bagchi, Shankhadeep Chakrabortty, Pulastya Parekh.  
Accepted in *JHEP*, [e-Print: [arXiv:1606.09628 \[hep-th\]](#)]. ([Weblink](#))
3. *Holographic Entanglement Entropy in NMG*  
Luca Basanisi, Shankhadeep Chakrabortty.  
Accepted in *JHEP*, [e-Print: [arXiv:1606.01920 \[hep-th\]](#)]. ([Weblink](#))
4. *Back reaction effects on the dynamics of heavy probes in heavy quark cloud*  
Shankhadeep Chakrabortty, Tanay Dey.  
Published in *JHEP* 1605 (2016) 094, [e-Print: [arXiv:1602.04761 \[hep-th\]](#)]. ([Weblink](#))
5. *Tensionless Strings from World sheet Symmetries*  
Arjun Bagchi, Shankhadeep Chakrabortty, Pulastya Parekh.  
Published in *JHEP* 1601 (2016) 158 [e-Print: [arXiv:1507.04361 \[hep-th\]](#)]. ([Weblink](#))
6. *Schwinger Effect and Negative Differential Conductivity in Holographic Models*  
Shankhadeep Chakrabortty, B.Sathiapalan  
Published in *Nucl.Phys.* B890 (2014) 241-262 [e-Print: [arXiv:1409.1383 \[hep-th\]](#)]. ([Weblink](#))
7. *Brownian motion in strongly coupled, anisotropic Yang-Mills plasma: A holographic approach*  
Shankhadeep Chakrabortty, Somdeb Chakraborty, Najmul Haque  
Published in *Phys.Rev.* D89 (2014) 066013 [e-Print: [arXiv:1311.5023\[hep-th\]](#)]. ([Weblink](#))
8. *Some aspects of QGP phase in a hQCD model*  
Rong-Gen Cai, Shankhadeep Chakrabortty, Song He, Li Li  
Published in *JHEP* 1302 (2013) 068 [e-Print: [arXiv:1209.4512\[hep-th\]](#)]. ([Weblink](#))
9. *Correlators of Giant Gravitons from dual ABJ(M) Theory*  
Shankhadeep Chakrabortty, Tanay K. Dey  
Published in *JHEP* 1203 (2012) 062 [e-Print: [arXiv:1112.6299\[hep-th\]](#)]. ([Weblink](#))

10. *Dissipative force on an external quark in heavy quark cloud*  
Shankhadeep Chakrabortty  
Published in [Phys.Lett. B705 \(2011\) 244-250](#) [e-Print: [arXiv:1108.0165\[hep-th\]](#)]. ([Weblink](#))
11. *Some BPS configurations of the BLG Theory*  
Sudipto Paul Chowdhury, Shankhadeep Chakrabortty, Koushik Ray  
Published in [Phys.Lett. B703 \(2011\) 172-179](#) [e-Print: [arXiv:1105.2898\[hep-th\]](#)]. ([Weblink](#))
12. *Proof of universality of electrical conductivity at finite chemical potential*  
Sayan K. Chakrabarti, Shankhadeep Chakrabortty, Sachin Jain  
Published in [JHEP 1102 \(2011\) 073](#) [e-Print: [arXiv:1011.3499\[hep-th\]](#)]. ([Weblink](#))
13. *Moduli and BPS configurations of the BLG theory*  
Shankhadeep Chakrabortty, Sudipto Paul Chowdhury, Thomas Köppe, Koushik Ray  
Published in [Phys.Lett. B695 \(2011\) 285-289](#) [e-Print: [arXiv:1005.3707\[hep-th\]](#)]. ([Weblink](#))
14.  *$w_\infty$  3-algebra*  
Shankhadeep Chakrabortty, Alok Kumar, Sachin Jain  
Published in [JHEP 0809 \(2008\) 091](#) [e-Print: [arXiv:0807.0284\[hep-th\]](#)]. ([Weblink](#))

(The titles are web-linked.)

### Theses

PhD Thesis: *Aspects of Gauge/Gravity Duality*. ([Weblink](#))

### SEMINARS

#### *“ $w_\infty$ 3-algebra and its geometric realisation”*

National Strings Meeting-2010 IIT Bombay, Mumbai, India (Feb '10).

#### *“BPS configuration and vacuum moduli space of BLG model”*

Institute of Physics, Bhubaneswar, India (Jan '11).

#### *“Drag force from AdS/CFT”*

Indian Institute of Science(IISc), Bangalore, India (April, '12);

Center for Quantum Space time (CQUeST), Seoul, South Korea (Feb. '12);

Asia Pacific Center for Theoretical Physics (APCTP), Pohang, South Korea (Feb '12);

Yukawa Institute for Theoretical Physics (YITP), Kyoto, Japan (Jan '12);

Nagoya University, Nagoya, Japan (Jan '12);

The University of Science and Technology of China (USTC), He-Fei, China, (Jan, '12);

Institute of Theoretical Physics (ITP), Beijing, China, (Dec, '11);

National Chiao Tung University (NCTU), Hsinchu, Taiwan (Dec, '11);

National String Meeting-2011, University of Delhi, Delhi, India (Delhi, '11).

Alok Kumar Memorial Meeting, Institute of Physics, Bhubaneswar, India (Sept, '11).

Saha Institute of Nuclear Physics (SINP), Kolkata, India (July, '11).

#### *“Correlators of Giant Gravitons from dual ABJ(M) Theory”*

Institute of Mathematical Sciences (IMSc), Chennai (April '12);

Center for Quantum Space time (CQUeST), Seoul, South Korea (Feb, '12);

6th Asian Winter School on String, Particle, Cosmology, Kusatsu, Japan (Jan, '12).

#### *“Brownian motion and AdS/CFT”*

Max-Planck-Institut für Gravitationsphysik (Albert-Einstein-Institut), Potsdam, Germany (Nov '14);

Vienna University of Technology, Vienna, Austria (Oct '14);

Instituto de Física Teórica UAM/CSIC, Madrid, Spain (July '14);

Oviedo University, Oviedo, Spain, (July '14);

National String Meeting, IIT Kharagpur, Kharagpur, India (Dec, '13).

*“Recent Developments in Holographic Entangle Entropy”*

Weekly Gravity Meeting, IISER-Pune, India, (February 2015).

*“Schwinger Effect and Negative Differential Conductivity in Holographic Models”* (Short Talk)

Advanced String School, ICTS-TIFR, India (June 2015).

*“Tensionless Limit of String Theory”*

Institute of Physics (IOP), Bhubaneswar, (July 2015).

*“Tensionless Limit of String Theory”*

Indian Institute of Technology, Kanpur, (January 2016).

*“AdS/CFT correspondence”*

Savitribai Phule Pune University, Pune, (February 2016).

*“AdS/CFT correspondence”*

Indian Institute of Technology, Patna, (February 2016).

## ACADEMIC AWARDS

*Post Doctoral Research Fellowship* at Van Swinderen Institute for Particle Physics and Gravity, University of Groningen.

*ERASMUS MUNDUS Post Doctoral Scholarship*: Awarded a six month postdoctoral exchange programme jointly sponsored by the NAMASTE Consortium (Networking & Mobility Actions for Sustainable Technology, Environment in India) and the European Community Mobility Programme Erasmus Mundus Action 2, Strand 1(EMA2).The post-doctoral position is hosted by Van Swinderen Institute for Particle Physics and Gravity, University of Groningen,The Netherlands under supervision of Prof Eric Bergshoeff

*Post Doctoral Research Fellowship* at Indian Institutes of Science Education and Research (IISER), Pune.

*Post Doctoral Research Fellowship* at Institute of Mathematical Sciences (IMSc), Chennai.

*Doctoral Research Fellowship* at Institute of Physics(IOP), Bhubaneswar, India.

## ACADEMIC ACHIEVEMENTS

*National Eligibility Test (Net)* : 2004.

*Graduate Aptitude Test in Engineering (GATE)* : 2005.

*Joint Entrance Screening Test (JEST)* : 2005.

## PROFESSIONAL ACTIVITIES

Organiser, Weekly Meeting of The Gravity Group, IISER-Pune.

Referee for *Journal of High Energy Physics*.

## SCHOOL, CONFERENCES AND WORKSHOPS ATTENDED

September 2006: *Advanced String School*, Institute of Physics, Bhubaneswar, India.

October 2006: *SERC preparatory school*, Centre for High Energy Physics, Indian Institute of Science, Bangalore, India.

December 2006: *Indian Strings Meeting (ISM06)*, Toshali, India.

January 2007: *SERC main school*, University of Hyderabad, Hyderabad, India.

September 2007: *Advanced String School*, Institute of Physics, Bhubaneswar, India.

December 2008: *Indian Strings Meeting (ISM08)*, Pondicherry, India.

March 2009: *Spring school in Superstring Theory and Related topics*, ICTP, Trieste, Italy.

January 2010: *The 4th Asian Winter School on Strings, Particles and Cosmology*, Mahabaleswar, India.

January 2010: *Alok Kumar Memorial Meeting*, Institute Of Physics, Bhubaneswar, India [Speaker].

February 2010: *National Strings Meeting (NSM10)*, IIT-Bombay, Mumbai, India [Speaker].

October 2010: *Advanced String School*, Institute of Physics, Puri, India.

January 2011: *Indian Strings Meeting (ISM11)*, Puri, India.

September 2011: *Alok Kumar Memorial Meeting*, Institute of Physics, Bhubaneswar, India [Speaker].

December 2011: *National String Meeting(NSM11)*, University of Delhi, Delhi, India [Speaker].

December 2011: *4th Taiwan String Theory Workshop*, National Chiao Tung University (NCTU), Hsinchu, Taiwan.

January 2012: *6th Asian Winter School on String, Particle, Cosmology*, Kusatsu, Gunma, Japan [Speaker, Short talk].

October 2012: *Advanced String School*, Institute of Physics, Bhubaneswar, India.

December 2012: *Indian String Meeting (ISM 2012)*, Institute of Physics, Bhubaneswar, India.

March 2013: *Spring school in Superstring Theory and Related topics*, ICTP, Trieste, Italy.

December 2013: *Asymptotia: Workshop on Asymptotic Symmetries in Classical and Quantum Gravity*, Chennai Mathematical Institute, India.

December 2013: *National String Meeting(NSM13)*, IIT Kharagpur, Kharagpur, India [Speaker].

April 2014: *Mock Modular Forms in Physics*, Institute of Mathematical Sciences, Chennai, India.

July 2014: *Summer School on String Theory and Holography*, Instituto Superior Técnico, Lisbon, Portugal.

September 2014: *Advanced String School*, Institute of Physics, Bhubaneswar, India.

December 2014: *Indian Strings Meeting (ISM14)*, Puri, India.

December 2014: *Stringy Days*, IISER-Pune, India.

June 2015: *Advanced String School, ICTS-TIFR*, Indian Institute of Science, Bangalore, India [Speaker, Short talk].

June 2015: *STRINGS-2015*, ICTS-TIFR, Bangalore, India.

March 2016: *Sixth Quantum Universe Symposium*, University of Groningen, Groningen, Netherlands.

April 2016: *Holography@D-ITP Triangle Meeting*, Utrecht University, Utrecht, Netherlands.

May 2016: *ERC and Solvay Workshop - Holography for Black Holes and Cosmology*, International Solvay Institute, Université libre de Bruxelles, Brussels, Belgium.