




## Faculty Details Proforma

|  |           |   |        |  |      |   |
|--|-----------|---|--------|--|------|---|
| Title  | Dr.       | First Name  | SOURAV | Last Name  | SUR  | Photograph  |
| Designation  |           | ASSISTANT PROFESSOR   |        |  |      |  |
| Address  | Office    | Room – 168, Multi-storey Block, Dept. of Physics & Astrophysics, Univ. of Delhi, Delhi - 110007 |        |  |      |   |
|  | Residence | C2/46 (Third Floor) Sector 5 Rohini, Delhi - 110085   |        |  |      |   |
| Phone  | Office    | +91-11-27667725/Extn. 1356  |        |  |      |   |
|  | Residence | +91-9999246729, +91-9999246718  |        |  |      |   |
|  | Mobile    | +91-9999246729, +91-9999246718  |        |  |      |   |
| Email  |           | sourav.sur@gmail.com, sourav@physics.du.ac.in   |        |  |      |   |
| Web-Page   |           | N.A.  |        |  |      |   |
| Educational Qualifications   |           |   |        |  |      |   |
| Degree   |           | Institution   |        |  | Year |   |
| Ph.D.  |           | Jadavpur University, Kolkata  |        |  | 2005 |   |
| M.Phil. / M.Tech.  |           | N.A.  |        |  |      |   |
| PG   |           | Jadavpur University, Kolkata  |        |  | 1998 |   |
| UG   |           | Jadavpur University, Kolkata  |        |  | 1994 |   |
| Any other qualification  |           | CSIR-NET (JRF plus Lectureship)   |        |  | 1999 |   |
| Career Profile   |           |   |        |  |      |   |
| <i>Duration</i>  |           | <i>Position Held</i>  |        | <i>Institution and Dept./Div./Group</i>  |      |   |
| 15 Mar. 2010 – Present   |           | Assistant Professor   |        | Department of Physics & Astrophysics, University of Delhi, New Delhi, India.     |      |   |
| 11 Nov. 2009 – 03 Mar. 2010  |           | Post-doctoral Fellow  |        | Theory Group, Saha Institute of Nuclear Physics, Kolkata, India.                 |      |   |
| 13 Sep. 2006 – 28 Feb. 2009  |           | Post-doctoral Research Associate  |        | Department of Physics & Astronomy, University of Lethbridge, Alberta, Canada.    |      |   |
| 05 Oct. 2004 – 06 Sep. 2006  |           | Post-doctoral Research Fellow   |        | Theoretical High Energy Physics Group, Institute of Physics, Bhubaneswar, India. |      |   |
| 24 Feb. 2000 – 04 Oct. 2004  |           | Research Fellow (CSIR JRF/SRF)  |        | Department of Physics, Jadavpur University, Kolkata, India.                      |      |   |
| 23 Aug. 1999 – 10 Feb. 2000  |           | Project Associate   |        | Physical Research Laboratory, Ahmedabad, India.                                  |      |   |
| 09 Mar. 1999 – 21 Aug. 1999  |           | Junior Research Fellow (DAE-sponsored Project)  |        | Department of Physics, Jadavpur University, Kolkata, India.                      |      |   |
| Administrative Assignments   |           |   |        |  |      |   |
| <ul style="list-style-type: none"> <li>❖ Member of Departmental Space Allocation Committee 2011-12</li> <li>❖ Member of Departmental Time Table Committer 2014-15</li> </ul> |           |   |        |  |      |   |
| Areas of Interest / Specialization   |           |   |        |  |      |   |
| <ul style="list-style-type: none"> <li>❖ General Relativity and Cosmology</li> </ul>   |           |   |        |  |      |   |

- ❖ **Physics of Black Holes**
- ❖ **String and Extra-dimensional Theories**

#### Subjects Taught (2008 onwards)

##### At the University of Delhi, India:

- **PHYS-403: Electromagnetic Theory & Electrodynamics [M.Sc. 1<sup>st</sup> Semester Course]: 2010, 2011, 2013-15.**
- **PHYS-406: Quantum Mechanics II [M.Sc. 2<sup>nd</sup> Semester Course]: 2011-15.**
- **PHYS-556: General Theory of Relativity & Cosmology I [M.Sc. 3<sup>rd</sup> Semester Special Paper]: 2012.**

##### At the University of Lethbridge, Canada:

- **Physics 1000a: Mechanics [UnderGrad Course]: Spring 2008, Fall 2008.**
- **Physics 2130a: Optics [UnderGrad Course (Theory & Lab.)]: Spring 2008.**

#### Research Guidance

*List against each head (If applicable)*

- |  |   |
|--|---|
| 1. Supervision of awarded Doctoral Thesis              | <b>NIL</b>  |
| 2. Supervision of Doctoral Thesis, under progress      | <b>2 [Arshdeep Singh Bhatia, Hiyang Remo Chhote].</b> |
| 3. Supervision of awarded M.Phil dissertations         | <b>N.A.</b>   |
| 4. Supervision of M.Phil dissertations, under progress | <b>N.A.</b>   |

#### Publications Profile (2008 onwards)

*List against each head (if applicable)*

- |  |            |
|--|------------|
| 1. Books/Monographs/Chapter or part of Book (Authored/Edited)  | <b>1</b>   |
| <ul style="list-style-type: none"> <li>▪ Title: <b>Black hole entropy from entanglement: A Review.</b><br/>           Authors: <b>Saurya Das, S. Shankaranarayanan and Sourav Sur</b><br/>           Reference: <b>Chapter of the edited book: Horizons of World Physics, Nova Publishers (2009).</b></li> </ul>   |            |
| 2. Research papers in Refereed/Peer Reviewed Journals  | <b>5</b>   |
| <ul style="list-style-type: none"> <li>a) Title: <b>Constraining Torsion in Maximally symmetric (sub)spaces.</b><br/>           Authors: <b>Sourav Sur and Arshdeep Singh Bhatia.</b><br/>           Reference: <b>Classical Quantum Gravity 31 025020 (2014) [Online pre-publication].</b><br/>           Journal Impact Factor: <b>3.562.</b></li> <li>b) Title: <b>Multiple kinetic k-essence, phantom barrier crossing and stability.</b><br/>           Authors: <b>Sourav Sur and Saurya Das.</b><br/>           Reference: <b>Journal of Cosmology &amp; Astro-particle Physics 0901 007 (2009).</b><br/>           Journal Impact Factor: <b>6.036.</b></li> <li>c) Title: <b>The Role of higher derivative bulk scalar in stabilizing a warped spacetime.</b><br/>           Authors: <b>Debaprasad Maity, Soumitra SenGupta and Sourav Sur.</b><br/>           Reference: <b>Classical Quantum Gravity 26 055003 (2009).</b><br/>           Journal Impact Factor: <b>3.320.</b></li> <li>d) Title: <b>Where are the degrees of freedom responsible for black hole entropy?</b><br/>           Authors: <b>Saurya Das, S. Shankaranarayanan and Sourav Sur.</b><br/>           Reference: <b>Canadian Journal of Physics 86 653 (2008).</b><br/>           Journal Impact Factor: <b>0.902.</b></li> <li>e) Title: <b>Power-law corrections to entanglement entropy of horizons.</b><br/>           Authors: <b>Saurya Das, S. Shankaranarayanan and Sourav Sur.</b><br/>           Reference: <b>Physical Review D 77 064013 (2008).</b><br/>           Journal Impact Factor: <b>4.691.</b></li> </ul> |            |
| 3. Research papers in Academic Journals other than Refereed/Peer Reviewed Journals   | <b>NIL</b> |

|  |            |
|--|------------|
| 4. <i>Research papers in Refereed/Peer Reviewed Conferences</i>  | <b>2</b>   |
| a) Title: <b>Entanglement and corrections to Bekenstein-Hawking entropy.</b><br>Authors: <b>Saurya Das, S. Shankaranarayanan and Sourav Sur.</b><br>Reference: <b>Proceedings of 12th Marcel Grossman Meeting, Paris, France (2010).</b>   |            |
| b) Title: <b>Power-law corrections to black-hole entropy via entanglement.</b><br>Authors: <b>Saurya Das, S. Shankaranarayanan and Sourav Sur.</b><br>Reference: <b>Proceedings of BH2, Dynamics and Thermodynamics of Blackholes, Milano, Italy (2008).</b>   |            |
| 5. <i>Research papers in Conferences/Seminar other than Refereed/Peer Reviewed Conferences</i>   | <b>NIL</b> |
| 6. <i>Other (Edited works/Book reviews/Communicated works/Works in progress)</i>   | <b>6</b>   |
| a) Title: <b>Crossing the cosmological constant barrier with kinetically interacting double quintessence.</b><br>Author: <b>Sourav Sur.</b><br>e-Print arXiv: <b>0902.1186 [astro-ph.CO].</b><br>Status: <b>Communicated to Journal of Cosmology &amp; Astro-particle Physics.</b>   |            |
| b) Title: <b>Can a metric-scalar coupling with torsion lead to a weakly interacting dark energy?</b><br>Authors: <b>Sourav Sur and Arshdeep Singh Bhatia.</b><br>Status: <b>Drafting done (to be communicated).</b>  |            |
| c) Title: <b>Phase-plane analysis of dark energy models in scalar coupled metric-torsion theories.</b><br>Authors: <b>Sourav Sur and Arshdeep Singh Bhatia.</b><br>Status: <b>Drafting done (to be communicated).</b>  |            |
| d) Title: <b>Cosmic acceleration in scalar coupled metric-torsion models involving the Holst term.</b><br>Authors: <b>Sourav Sur, Arshdeep Singh Bhatia and Hiyang Ramo Chothe.</b><br>Status: <b>In progress.</b>   |            |
| e) Title: <b>On the aspect of parity violation in metric-torsion theories of gravity.</b><br>Author: <b>Sourav Sur.</b><br>Status: <b>In progress.</b>   |            |
| f) Title: <b>Lecture Notes in Special Relativity &amp; Relativistic Electrodynamics.</b><br>Author: <b>Sourav Sur.</b><br>Status: <b>In progress (to be uploaded to arxiv.org for copyrighted general access).</b>   |            |
| <b>Conference Organization/ Presentations (in the last three years)</b>  |            |
| <i>List against each head (if applicable)</i>  |            |
| 1. <i>Organization of a Conference</i>   |            |
| ❖ Conference: <b>International Conference on Light-Cone Physics Delhi 2012 (Delhi LC-2012).</b><br>Held at: <b>Department of Physics &amp; Astrophysics, University of Delhi, December 10 – 15, 2012.</b><br>Member of: <b>Local Organizing Committee.</b>   |            |
| 2. <i>Participation as Paper/Poster Presenter</i>  |            |
| ❖ <b>WHERE IS THE MISSING ENERGY?</b> -- Invited talk on the modern trends on Cosmological Dark Energy, at the <b>Refresher Course on Physics &amp; Electronics</b> , Sept.-Oct. 2012, Dept. of Physics & Astrophysics, University of Delhi.   |            |
| <b>Research Projects (Major Grants/Research Collaboration)</b>   |            |
| <b>NIL</b>   |            |
| <b>Awards/Distinctions/Fellowships</b>   |            |
| <ul style="list-style-type: none"> <li>▪ <b>Post-doctoral Fellowship, Theory Group, Saha Inst. of Nuclear Physics, Kolkata, India, 2009.</b></li> <li>▪ <b>Post-doctoral Research Associateship, Dept. of Physics, Univ. of Lethbridge, Canada, 2006.</b></li> <li>▪ <b>Post-doctoral Fellowship, Institute of Physics, Bhubaneswar, India, 2004.</b></li> <li>▪ <b>Senior Research Fellowship (CSIR), India, 2002.</b></li> </ul> |            |

- **Junior Research Fellowship and eligibility for lectureship (CSIR-NET), India, 2000.**
- **Junior Research Fellowship (DAE sponsored project), India, 1999.**

#### Association With Professional Bodies

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|---------------------------------|--|
| 1. <i>Editing</i>               | <b>N.A.</b>  |
| 2. <i>Reviewing</i>             | <b>N.A.</b>  |
| 3. <i>Advisory</i>              | <b>N.A.</b>  |
| 4. <i>Committees and Boards</i> | <b>N.A.</b>  |
| 5. <i>Memberships</i>           | <b>Indian Association for General Relativity &amp; Gravitation</b> |
| 6. <i>Office Bearer</i>         | <b>N.A.</b>  |

#### Other Activities

**N.A.**