




## Faculty Details proforma for DU Web-site

(PLEASE FILL THIS IN AND Email it to [websiteDU@du.ac.in](mailto:websiteDU@du.ac.in) and  
cc: [director@ducc.du.ac.in](mailto:director@ducc.du.ac.in))

Title	<b>Dr.</b>	First Name	<b>Supriya</b>	Last Name	<b>KAR</b>	Photograph
Designation	<b>Professor</b>					
Address	<b>D-7-2, First Floor, Delhi University Flat MAURICE NAGAR, New Delhi 110 007</b>					
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	Residence					
	Mobile	<b>+91 99 1191 8174</b>				
Email	<a href="mailto:skkar@physics.du.ac.in">skkar@physics.du.ac.in</a> and <a href="mailto:supriya.k.kar@gmail.com">supriya.k.kar@gmail.com</a>					
Web-Page	<a href="http://fy.chalmers.se/~supriya">http://fy.chalmers.se/~supriya</a>					
Educational Qualifications						
Degree	Institution		Year			
Ph.D.	Institute of Physics (DAE), Bhubaneswar		1995			
M.Phil. / M.Tech.	Institute of Physics (DAE), Bhubaneswar		1991			
PG	Utkal University (Vani Vihar) Bhubaneswar		1989/90			
UG	Utkal University (F.M. College) Baleswar		1987			
Any other qualification	None					
Career Profile						
<p>(1) Department of Physics &amp; Astrophysics, University of Delhi as a Faculty Member since 2002 (18 years)</p> <p>(2) Indian Institute of Technology, Kanpur as Assistant Professor during 2001-2002 (2 years)</p> <p>(3) Chalmers Univ. of Technology, Goteborg, Sweden as (NFR) Research Associate during 1998-2000 (2 years)</p> <p>(4) University of Tokyo, Komaba, Tokyo, Japan as JSPS Post-Doctoral Fellow during 1996-98 (2 years)</p> <p>(5) Harish-Chandra Research Inst, Allahabad as a Post-Doctoral Research Associate during 1995-96 (1 year)</p>						
Some Administrative Assignments						
<b>1] Deputy Superintendent of Examinations:</b>						
1.1 M.Sc.-Physics and PhD course-work examination (3-times) during 2006 Nov-Dec, 2010 Nov-Dec & 2011 April-May						
1.2 PhD Entrance Exam at DU for (SINP) Saha Institute of Nuclear Physics-Kolkata (5-times) during 2011-2015						
<b>2] Member of Committees:</b>						
2.1 Faculty of Science since March 2018						
2.2 Board of Research Studies (Sciences) since July 2018						
2.3 Committee of Courses for M.Sc-Physics: 2014-16, 2017-						
2.4 Time-Table for M.Sc-Physics since 2014						
2.5 Departmental: Executive Committee during 2010-2012 and 2019- Library, TPSC (a number of times) during 2003-2012						

### 3] Academic responsibilities outside Delhi University:

Refereed manuscript to Journals (EPJ-C, CQG, Pramana), External Examiner of PhD theses (8), Resource person, Confidential work at UPSC, SSC and at some Universities (M.Sc, PhD and Entrance Exams)

#### Areas of Interest / Specialization

High Energy Physics, Gravitation and Cosmology

**Keywords: Quantum Gravity, Superstrings & D-branes, Higher-forms, Non-commutative geometry:**

#### RESEARCH INNOVATIONS:

- (i) Non-perturbative quantum gravity (geometric torsion dynamics)
- (ii) Mass generation without Higgs Mechanism: a non-perturbation technique
- (iii) Cosmological pair production of universe/anti-universe (Big Bang)
- (iv) Quintessence Cosmology, Gravitational Instanton and Gravitational wave
- (v) de Sitter tunneling, black hole thermodynamics and accelerated expansion of universe
- (vi) Non-commutative space-time, New geometries and Emergent gravity

#### Subjects Taught

### 1- At the University of Delhi , Department of Physics & Astrophysics ( 2002 - till date )

#### \*PG Core courses:

- (i) Classical Mechanics ( 2003, 2004, 2005, 2006 & 2008 )
- (ii) Quantum Mechanics ( 2014, 2015 & 2016 )
- (iii) Radiation Theory ( 2002, 2003, 2004, 2005, 2008 & 2009 )
- (iv) Electromagnetic Theory ( 2009 )
- (v) Nuclear Physics (previous) Laboratory ( 2015 )

#### \*PG Special (Elective) Courses:

- (i) An Introduction to String Theory ( 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2019)
- (ii) General Theory of Relativity: GTR-I ( 2009, 2010, 2016 & 2017)
- (iii) Cosmology: GTR-II ( 2017 & 2018)
- (iv) Quantum Field Theory-I ( 2008 )
- (v) Particle Physics-I ( 2007, 2008, 2009, 2012, 2013, 2014 & 2018)
- (vi) Particle Physics-II ( 2012, 2013, 2014, 2017, 2018, 2019, 2020)
- (vii) Computer Lab (2019)

### 2- At I.I.T. Kanpur ( 2001-2002 ):

- (i) Mechanics ( 2001 & 2002 )
- (ii) Electromagnetism & Quantum Theory ( 2001 & 2002 )
- (iii) Electricity & Magnetism Lab ( 2002 )

#### Research Guidance

#### • Supervision of Doctoral Thesis:

#### 1) “String and Space-time Geometries”

*Mr. Sumit Majumdar ( CSIR Fellowship ) during 2003-2006, moved to a job*

#### 2) “Geometric Aspects of D-brane in String Theory”

*Dr. Abhishek Kumar Singh ( CSIR Fellowship ), 2008-2013, PhD awarded in 2014 March*

- 3) **“D-brane-world and String Theory”**  
*Dr. Sunita ( UGC Fellowship ) 2009-2014, PhD awarded in 2015 February*
  - 4) **“Black holes, Branes and Strings”**  
*Dr. K. Priyabrata Pandey ( Dept. Fellowship ) 2009-2014, PhD awarded in 2015 September*
  - 5) **“AdS/CFT duality and Emergent Gravity”**  
*Ms. Richa Kapoor ( CSIR Fellowship ) 2010 October-2016 (moved)*
  - 6) **“(Anti) de Sitter Black Holes in String Theory”**  
*Mr. Deobrat Singh (UGC Fellowship) since 2011, PhD awarded in 2021 March*
  - 7) **“Black holes and D-brane-world Geometries”**  
*Ms. Richa ( DST Fellowship ) during 2010-2013 July (moved)*
  - 8) **“(Anti) de Sitter Vacua and D-branes in Superstring Theory”**  
*Mr. Prashant Kumar (CSIR Fellowship) 2013 August – 2015 (moved)*
  - 9) **“Some Aspects of Non-Perturbative Quantum Gravity in a Two Form Gauge Theory”**  
*Mr. Nitish (Dept. Fellowship) since 2016, PhD awarded in 2021 March*
  - 10) **Broad subject: “High Energy Physics and Gravitation Theory”**  
*Mr. Rohit K. Gupta (Dept. Fellowship) since 2016 Dec, in progress*
  - 11) **Broad subject: “High Energy Physics and Gravitation Theory”**  
*Mr. Jitesh Kumar (Faculty Member@ Rajdhani College) since 2017 Sept, in progress*
  - 12) **Broad subject: “High Energy Physics and Gravitation Theory”**  
*Ms. Monika (CSIR Fellowship) since 2018 Sept, in progress*
  - 13) **Broad subject: “High Energy Physics and Gravitation Theory”**  
*Ms. Pratibha (Dept. Fellowship) since 2018 Sept, in progress*
  - 14) **Broad subject: :High Energy Physics and Gravitation”**  
*Mr. Pradeep Kumar (CSIR Fellowship) since 2021 Feb, in progress*
- **Advisor: UGC Post Doctoral Fellowship 2016-2021**  
*Post Doctoral Fellow: Dr. Rohit Kumar, PhD ( BHU-Varanasi )*
  - **No. of PhD course-work dissertation supervised: 15**
  - **No. of PG ( III and IV-semesters ) dissertation supervised: 17**
  - **No. of UG dissertation (summer projects/internship) supervised: 19**

#### Publications Profile

List against each head(If applicable) (as Illustrated with examples)

1. **Books/Monographs (Authored)**  
*[57] Kar, Supriya.  
2021 (Book) Non-commutative Geometry: A Perspective on String and Field Theories.  
Singapore: World Scientific Publication (in press)- by invitation.*

[56] Kar, Supriya.  
2017 Editor, Special Issue "Black Holes and Cosmology"  
*Journal of Astrophysics ad Aerospace Technology* (2017)

[55] Kulshreshtha, Daya S., Supriya Kar, Vinod Nautiyal, Usha Kulshrestha and Swarnendu Sarkar, 2014 (Edited Volume)  
*International Conference on Light-Cone Physics: Hadronic and Particle Physics, Nuclear Physics Proceedings Supplements 251-252* (2014)

## 2. Research papers published in Refereed/Peer Reviewed Journals

[54] Nitish, R and Supriya Kar  
2021, Geometric torsion, four-form, Riemann duals and Quintessence  
<https://doi.org/10.1142/S0218271821500115>  
*International Journal of Modern Physics D30* (2021) 2150011, 20pp

[53] Gupta, Rohit K, Supriya Kar and R. Nitish  
2020, Aspects of Gravitational Wave/Particle Duality:  
Bulk Torsion/Boundary Gravity Correspondence  
*International Journal of Modern Physics D29* (2020) 02, 2050019

[52] Nitish, R, Rohit K. Gupta and Supriya Kar  
2020, Perspective of Perihelion precession in Torsion Modified Gravity  
*International Journal of Modern Physics D* (2020) 2050074, 11 pages

[51] Kar, Supriya, R. Nitish and Deobrat Singh  
2019, CFT<sub>6</sub> Bulk/Boundary AdS<sub>5</sub> Correspondence and Emergent Gravity  
*Physica Scripta* 94 (2019) 7, 075301

[50] Kar, Supriya and R. Nitish  
2019, Mass Generation from a Non-perturbative Correction:  
Massive NS-field and Graviton in (3+1) Dimensions  
*Progress in Theoretical and Experimental Physics* 4 (2019) 043B02

[49] Kar, Supriya  
2017, Towards Non-perturbation Theory of Emergent Gravity  
e-Print: arXiv:1610.07347 [hep-th]

[48] Singh Deobrat and Supriya Kar  
2016, Origin of dark energy in the universe: Can D-instanton be a source a quintessence?  
*International Journal of Innovative Research in Science, Engineering & Technology* 5, no.8,  
Pp:15785-15780

[47] Kar Supriya, K. Priyabrat Pandey, Abhishek K. Singh and Sunita Singh  
2016, Gravity dual D3-braneworld and Open/Closed string duality  
*International Journal of Innovative Research in Science, Engineering & Technology* 5, no.9,  
15926-15929

- [46] Pandey Priyabrat, Abhishek K. Singh, Sunita Singh and Supriya Kar  
2016, Non-perturbative quantum effects in stringy degenerate geometries:  
Vacuum created pair of  $(DD^-)$ 3-brane by a two form  
International Journal of Innovative Research in Science, Engineering & Technology 5, no.10,  
17600-17614
- [45] Kar Supriya  
2016, *Quintessential Cosmology and D-instanton*  
Review article (invited),  
*Journal of Astrophysics & Aerospace Technology* (2015)
- [44] Pandey Priyabrat, Sunita Singh and Abhishek Singh and Supriya Kar ;  
2015, Quintessence and effective AdS brane geometries,  
International Journal of Modern Physics A30 (2015) 13, 1550065,  
arXiv:1405.6113 [hep-th]**
- [43] Kapoor Richa, Supriya Kar and Deobrat Singh;  
2015, Quantum effects in topological and Schwarzschild de Sitter brane: Aspects of torsion on  
a pair of D4-brane/anti-brane universe,  
*International Journal of Modern Physics D24* (2015) 02, 155015,  
arXiv:1407.7756 [hep-th]
- [42] Singh, Sunita, Priyabrat Pandey, Abhishek Singh and Supriya Kar ;  
2014, Quantum Kerr tunneling vacua on a pair of D4-brane/anti-brane:  
An emergent Kerr black hole in 5D,  
Nuclear Physics B879 (2014) 216-234, arXiv:1310.4424 [hep-th]**
- [41] Singh, Sunita, Priyabrat Pandey, Abhishek Singh and Supriya Kar ;  
2014, Quantum Kerr(Newman) degenerate vacua in 4D on a non BPS brane,  
*International Journal of Modern Physics A29* (2014) 1450164, arXiv:1311.3605 [hep-th]
- [40] Pandey, Priyabrat, Sunita Singh and Abhishek Singh and Supriya Kar ;  
2014, Quintessence and effective RN de Sitter brane geometries,  
European Physical Journal C74 (2014) 11, 3173, arXiv:1405.3931 [hep-th]**
- [39] Pandey, Priyabrat, Sunita Singh and Abhishek Singh and Supriya Kar ;  
2014, Non-perturbative quantum effects in stringy degenerate geometries:  
Vacuum created pair of D3-brane/anti-brane by a two form, arXiv: 1405.7917 [hep-th]
- [38] Pandey, Priyabrat, Sunita Singh and Abhishek Singh and Supriya Kar ;  
2013, Emergent gravity/Non-linear  $U(1)$  gauge theory correspondence;  
*J. of Astrophysics and Aerospace Technology* 3 (2013) 1, 10000101, arXiv;1002.3976 [hep-th]
- [37] Supriya Kar ; 2013 Editorial article  
*Non-Perturbative Quantum Gravity in Five Dimensions;*  
*Journal of Astrophysics and Aerospace Technology* 3 (2013) e106

- [36] **Singh, Abhishek, Priyabrat Pandey, Sunita Singh and Supriya Kar ;**  
**2013, Discrete torsion, de Sitter tunneling and AdS brane:**  
***U(1) gauge theory on D4-brane and an effective curvature;***  
***Journal of High Energy Physics 1303 (2013) 033, arXiv:1303.4344 [hep-th]***
- [35] **Singh, Abhishek, Priyabrat Pandey, Sunita Singh and Supriya Kar ;**  
**2013, Emergent Schwarzschild and Reissner-Nordstrom Black Holes in 4D:**  
***An effective curvature sourced by a B2-field on a D4-brane;***  
***Physical Review D88 (2013) 066001, arXiv: 1305.3525 [hep-th]***
- [34] Kar, Supriya., K. Priyabrat Pandey, Sunita Singh and Abhishek K. Singh.  
 2010, Gravity Dual D3-Braneworld and Open/Closed String Duality, arXiv: 1002.1906 [hep-th]
- [33] Kar, Supriya.  
 2009, Non-commutative D-Brane World, Black Holes and Extra Dimensions.  
*International Journal of Modern Physics A24: 3571-3576.*
- [32] Kar, Supriya.  
 2006, Noncommutative brane-world, (Anti) de Sitter vacua and extra dimensions,  
*Journal of High Energy Physics 0610: 052.*
- [31] **Kar, Supriya.**  
**2006, Tunneling between de Sitter and AdS black holes in a non-commutative D3-brane**  
**formalism, *Physical Review D74:126002.***
- [30] **Kar, Supriya. and Sumit Majumdar.**  
**2006, Non-commutative D(3)-brane, black holes and attractor mechanism.**  
***Physical Review D74:0606026***
- [29] Kar, Supriya. and Sumit Majumdar.  
 2006, Black hole geometries in non-commutative string theory.  
*International Journal of Modern Physics A21:6087-6114*
- [28] Kar, Supriya. and Sumit Majumdar.  
 2006, Scattering of non-commutative strings: A Note on signature change at Planck scale.  
*International Journal of Modern Physics A21:2391-2403.*
- [27] **Jain, Pankaj., Supriya Kar and Sukanta Panda.**  
**2003, Brane production and the neutrino nucleon cross-section at ultrahigh-energies**  
**in low scale gravity models; *International Journal of Modern Physics D12:1593-1602.***
- [26] Kar, Supriya.  
 2003, D-branes, cyclic symmetry and non-commutative geometry,  
*Modern Physics Letters A18:1053-1065.*
- [25] **Jain, Pankaj, Supriya Kar, Douglas W. McKay, Sukanta Panda and John P. Ralston.**  
**2002, Angular dependence of neutrino flux in KM<sup>3</sup> detectors in low scale gravity**  
**Model, *Physical Review D66:065018.***

**[24] Kar, Supriya. and Sudhakar Panda.**  
**2002, Electromagnetic Strings: Complementarity between Time and Temperature,**  
**Journal of High Energy Physics: 0211:052.**

[23] Kar, Supriya.  
2001, Generalized Dirichlet Branes and Zero Modes.  
International Journal of Modern Physics A1: 41-56.

[22] Kar, Supriya.  
2000, Non-commutativity, Zero Modes and D-Brane Geometry.  
Nuclear Physics B577:171-182.

[21] Kar, Supriya.  
1999, Path integral formulation of Dirichlet string in general backgrounds,  
Nuclear Physics B554:163-182.

**[20] Kar, Supriya. and Yoichi Kazama.**  
**1999, Interaction of D string with F string: A Path integral formalism.**  
**International Journal of Modern Physics A14:1531-1550.**

**[19] Kar, Supriya. 1997, D-branes and Twelve Dimensions,**  
**Nuclear Physics B497:110-126.**

[18] Kar, Supriya., Alok Kumar and Gautam Sengupta.  
1996, Exact Type IIB Superstring Backgrounds,  
Physics Letters B375: 121-126.

**[17] Kar, Supriya., Jnanadeva Maharana and Sudhakar Panda.**  
**1996, Dualities in five-dimensions and charged string solutions,**  
**Nuclear Physics B465:439-457.**

[16] Kar, Supriya., Jnanadeva Maharana and Harvendra Singh.  
1996, S-duality and cosmological constant in string theory,  
Physics Letters B374:43-48.

**[15] Kar, Supriya. and Jnanadeva Maharana.**  
**1995, Planckian scattering of non-Abelian gauge particle,**  
**International Journal of Modern Physics A10: 2733-2746.**

[14] Kar, Supriya. and Alok Kumar.  
1994, Target space of an asymmetric chiral gauged WZW model,  
Modern Physics Letter A9: 853-859.

**[13] Kar, Supriya. S. Pratik Khastgir and Gautam Sengupta.**  
**1993, Four-dimensional stringy black membrane.**  
**Physical Review D47:3643-3646.**

[12] Kar, Supriya and Alok Kumar.  
1992, Hidden isometry in a chiral gauged WZW model, *Hep-th/9209068*

**[11] Kar, Supriya. and Alok Kumar.  
1992, Target space structure of a chiral gauged Wess-Zumino-Witten model.  
Physics Letter B291:246-250.**

[10] Kar, Supriya. S. Pratik Khastgir and Alok Kumar.  
1992, An Algorithm to generate classical solutions of string effective action,  
*Modern Physics Letter A7:1545-1552.*

3. a) Research papers published in Academic Journals other than Refereed/Peer Reviewed Journals:  
NONE

**b) Research papers published in Refereed/Peer Reviewed Conferences**

**[9] Singh, Abhishek, K. Priyabrat Pandey, Sunita Singh and Supriya Kar;  
2018, Cosmological Pair Creation of Universe and Anti-Universe at Big Bang,  
Springer Proceedings Physics 203 (2018) 305-308**

**[8] Singh, Sunita, Supriya Kar, K. Priyabrat Pandey and Abhishek K. Singh;  
2018, Degenerate Quantum Vacua and Kerr Family of Black Holes,  
Springer Proceedings Physics 203 (2018) 271-273**

[7] Singh, Deobrat, Richa Kapoor and Supriya Kar;  
2016, Torsion Geometries in  $U(1)$  Gauge Theory on D5-brane  
*Springer Proceedings Physics 174 (2016) 507-512*

[6] Singh, Abhishek, Priyabrat Pandey, Sunita Singh and Supriya Kar .  
2014, Discrete Torsion, (Anti) de Sitter D4-Brane and tunneling  
*Nuclear Physics B Proceedings Supplements 251-252 (2014) 141-145.*

**[5]. Kar, Supriya., K. Priyabrat Pandey, Sunita Singh and Abhishek K. Singh  
2011, Curved D-Braneworld Action in 4D and Black Holes.  
Proceedings of the Conference in Honour of Murray Gell-Mann's 80<sup>th</sup> Birthday: 559-566.  
Singapore: World Scientific Publication.**

[4]. Kar, Supriya., K. Priyabrat Pandey, Sunita Singh and Abhishek K. Singh.  
2011, D-Braneworld Black Holes.  
*Proceedings of the Conference in Honour of Murray Gell-Mann's 80th Birthday: 567-574*  
Singapore: World Scientific Publication.

[3]. Kar, Supriya.,  
2000, Path Integral Formalism for a Dirichlet String.  
Varmland. *Proceedings of Nordic Conference.*



**[2]. Kar, Supriya.,**  
**1993, Space-time Interpretations of Chiral Gauged WZW Model.**  
**Trieste. ICTP Proceedings of High Energy Physics & Cosmology: 412-419**

c) Research papers Published in Conferences other than Refereed/Peer Reviewed Conferences

[1]. Kar, Supriya.,  
2008, Non-commutative Braneworld and (Anti) de Sitter Black Holes,  
Proceedings of the Workshop on Physics of Warped Extra Dimensions: 187-192  
(IIT Khragapur)

4. **Other publications (Edited works, Book reviews, Festschrift volumes, etc.) – NONE**

Conference Organization/ Presentations (in the last three years)

List against each head (If applicable)

**Organization of a Conference:**

1. Member, Technical Program Committee,  
Int'l Conference on Geometry, Topology and Applications  
2016 Jan 14-16, Bangkok, Thailand
2. Member, Technical Program Committee,  
Int'l Conference on Geometry, Topology and Applications  
2015 Jan 29-31, Shanghai, China

**3. Participation in some of the Conferences in last 5-years:**

- (1) 2019 March 28-31, "Recent Developments in String Theory and Cosmology" at NISER, Bhubaneswar  
-Invited to deliver a talk on "Shades of Quantum Gravity"
- (2) 2018 Nov 25-30, "Recent Trends in Quantum Field Theory" at BHU, Varanasi  
-Invited to deliver a talk on "BTZ black hole and Quantum Gravity"
- (3) 2018 April 6-8, Int'l Conference "Recent Developments in Cosmology" at BHU, Varanasi  
-Invited speaker
- (4) 2017 Dec.14-15, Faculty Development Programme at Rajdhani College, University of Delhi  
-Invited to deliver a talk on "Tensors and Geometry"
- (5) 2017 March 6-11, School on "Computational High Energy Physics" at University of Hyderabad  
-Resource person (delivered a set of lectures on General Relativity & Cosmology)
- (6) 2016 Nov.06-10, Int'l Conference "New Trends in Quantum Field Theory" at BHU, Varanasi  
-Invited speaker
- (7) 2015 Aug 23-29, Int'l Conference "SUSY 2015" at Lake Tahoe, California, USA organized by the  
University of California-Davis -invited speaker
- (8) 2015 June 21-26, Int'l Conference "STRINGS 2015" at Bengaluru organized by ICTS-TIFR

#### Research Projects (Major Grants/Research Collaboration)

- (1) **DST Research Project 2003-2006: Fast Track Proposal for Young Scientists**
- (2) **DST Research Project 2010-2013**

#### Awards and Distinctions

- (1) **2020, Outstanding Reviewers Award** 2019 for Classical & Quantum Gravity Journal by Institute of Physics Publication, UK
- (2) **2019 Invited to deliver two research talks** at an Int'l conference SUSY at Texas, Austin, USA
- (3) **2016, Member, Technical Program Committee**, Int'l Conference 2016 Jan 14-16 on "Geometry, Topology & Applications" at Bangkok, Thailand
- (4) **2015, Member, Technical Program Committee**, Int'l Conference 2015 Jan 29-31 on "Geometry, Topology & Applications" at Shanghai, China
- (5) **2013 Invited to author a book** "Non-commutative Geometry: Perspective in String and Field Theories" by World Scientific, Singapore
- (6) **2013-17 Editor**, HEP-The Scientific World Journal, Hindwai Publication
- (7) **2011- Editor**, Journal of Astrophysics & Aerospace Tech, LA, USA
- (8) **2010- Editor**, ISRN (Int'l Scholarly Research Network) Geometry Journal
- (9) **2002 Selected for Fast Track Young Scientists** by DST, New Delhi, India
- (10). **2000 Selected for Fast Track Young Scientists** by DST, New Delhi, India
- (11). **1998 NFR (Post Doctoral) Fellow** 1998-2000, Gothenburg, Sweden
- (12). **1996 JSPS (Post Doctoral) Fellow** 1996-97 and 1997-98 at University of Tokyo, Komaba, Japan
- (13). **1995 Post Doctoral Fellowship** 1995-96 at HRI (DAE), Allahabad, India
- (14). **1991 Doctoral Fellowship** 1991-95 at IoP (DAE), Bhubaneswar, India
- (15). **1990 Pre-Doctoral Fellowship** 1990-91 at IoP (DAE), Bhubaneswar, India
- (16). **1990 (M.Sc) and 1987 (B.Sc) University rank(s)**, Utkal University, Bhubaneswar, India
- (17). **1990 Selected for CSIR fellowship**

#### Association With Professional Bodies

**Member , Indian Physics Association, Mumbai**

#### Other Activities

2018 April 24, **Invited IPA Colloquium** entitled "Black Holes and Ghosts" at BHU-Varanasi  
2019 April , **Seminar talk** entitled "BTZ Black Hole and Quantum Gravity" at SINP, Kolkata

Signature of Faculty Member

- You are also requested to also give your complete resume as a DOC or PDF file to be attached as a link on your faculty page.