

I. NAME: PATRICK DAS GUPTA

II. ACADEMIC QUALIFICATIONS:

(1) National Science Talent Scholar, 1976

(2) 5 years Integrated M.Sc.(Hons) in Physics from B.I.T.S., Pilani, 1976-1981

(3) PhD from T.I.F.R., Mumbai, 1982-1988

(4) Post-doctoral work chiefly at I.U.C.A.A., Pune, with brief visits to Cardiff University (UK) and Observatoire de Meudon (France), for post-doctoral research, during 1989 - 1993

(5) Faculty member in the Department of Physics and Astrophysics, University of Delhi, Delhi - 110 007, from 1993 to 2024, and a full Professor from 2004 to 2024; superannuated on March 31, 2024.

(6) Senior Professor (Honorary), ICSP, Kolkata, from November, 2025.

III. PRESENT ADDRESS :

202, Parameswari Residency,
Alluri Sitaramaraju Nagar, Near JP Nagar,
Hyderabad- **500049**.

IV. AREAS OF RESEARCH INTEREST:

(a) Fast Radio Bursts from: 1. Magnetar glitches, or 2. Blandford-Znajek or 3. Strange quark star

(b) Dark matter and supermassive black holes from Bose-Einstein condensation of scalar/pseudo-scalar particles

(c) Dynamical four-form, Chern-Simons gravity and dark energy

(d) Gamma Ray Burst sources

(e) Primordial black holes and baryogenesis

(f) Bose-Einstein condensates in hexagonal lattice and non-linear Dirac equation

(g) Gravitational waves from dyon-dyon binary systems

(i) Dirac equation and magnetic charge with local duality symmetry, Magnetic monopoles and Dyons

(j) Protective measurements in Quantum mechanics; Born probability and Finkelstein-Hartle Frequency operator

(k) Radio-galaxies and non-evolving luminosity functions; quasar redshift periodicities

V. RESEARCH EXPERIENCE:

I joined I.I.Sc., Bangalore, in 1981, as a graduate student and studied gauge theories, symmetry breaking and path integrals. Then, in 1982, I left for T.I.F.R, Mumbai, to join the Theoretical Astrophysics Group as a Ph.D. student to carry out research on luminosity functions of radio-galaxies in various cosmological models. After my submission of thesis in 1988, I joined I.U.C.A.A., Pune, as a TWAS post-doctoral fellow to work on black holes and gravitational waves.

During 1989-90, I briefly visited University of Wales, Cardiff (UK), as a SRF to learn gravitational wave data analysis techniques, and visited T. Damour's group at Observatoire de Paris, Meudon, to learn about gravitational radiation from Hulse-Taylor binary pulsar. In 1991, I was selected as a CSIR research associate to work at I.U.C.A.A. During that time, I researched gravitational waves from mini-creation events, quasar redshifts and electromagnetic duality symmetry.

In 1992, I participated in the International School of Astrophysics (Erice, Italy) on 'Current topics in Astrodynamical Physics' and then visited University of Tufts, Medford, USA, as well as Brown University, Providence, USA, to lecture on 'Local duality symmetry and magnetic monopoles' and 'Gravitational waves from mini-creation events'. I presented a poster-paper on 'Local duality symmetry and magnetic monopoles' in a conference 'Fundamental Aspects of Quantum Theory' held at the University of South Carolina, Columbia (USA) in December 1992.

I joined the department of Physics and Astrophysics, University of Delhi, as a lecturer in 1993, and researched on primordial black holes, on detecting possible gravitational lensing of gamma ray bursts and on protective measurement in quantum theory. I was selected as a Reader in 1996 during which time I was researching baryogenesis from evaporating black holes as well as on Gamma Ray Bursts.

I became a professor in 2004, during which time I was working on Gamma Ray Bursts and on Dark Energy. I have been working on a new idea of mine concerning dark energy, torsion and Chern-Simon gravity from a dynamical four-form. In recent times, I have been working on the possibility of generating supermassive black holes from Bose-Einstein condensation of bosonic dark matter. I am also currently researching Fast Radio Bursts from magnetar glitches as well as on gravitational waves from dyon-dyon interactions. I was elected as the President of the Indian Association of General Relativity and Gravitation for the term 2000-2022.

VI. LIST OF PUBLICATIONS:

1. P. Das Gupta, J. Phys. A: Math. Gen. 17, 2895 (1984)
2. P. DasGupta, J.V. Narlikar & G.R.Burbidge, Astronomical Journal (ISSN 0004-6256),95, pp 5-14 (1988)
3. G. Burbidge, G., A. Hewitt, J. V. Narlikar & P. Das Gupta, P. Astrophysical Journal, Supplement Series, 74 . pp. 675-730 (1990)
4. D. Duari, P. Das Gupta & J. V. Narlikar, The Astrophysical Journal, 384, pp 35-42 (1992)
5. P. Das Gupta & J.V. Narlikar, Monthly Notices of the Royal Astronomical Society, 264, pp 489-496 (1993)
6. P. Das Gupta (IUCAA Preprint No.3054, 1993)
(https://www.researchgate.net/profile/Patrick_Das_Gupta/publications)
7. P. Das Gupta, in Advances in Gravitation and Cosmology, eds. B. R. Iyer, A. R. Prasanna, R. K. Varma & C. V. Vishveshwara (Wiley Eastern Limited, 1993), pp 283-284
8. P. Das Gupta, in Quantum Coherence and Reality, eds. J.S.Anandan & J.L.Safko (World Scientific,1994), pp 95-105
9. S. R. Choudhury, P. Das Gupta and K. Datta (University of Delhi Preprint, 1994) **DOI:**
10.13140/2.1.5064.7041

10. P. Das Gupta & A.N. Ramaprakash, *Journal of Astrophysics and Astronomy*, 16, Suppl., pp 141-143 (1995)
11. A.S.Majumdar, P.Das Gupta and R.P.Saxena, *Int. Jour. Mod. Phys. D* 4, 517 (1995)
12. A.S.Majumdar, P.Das Gupta and R.P.Saxena, in *Advances in Theoretical Physics*, edited by A.P.Pathak (Narosa Publishers, New Delhi, 1996)
13. P. Das Gupta, in *Geometry, Fields and Cosmology*, eds. B.R.Iyer & C.V.Vishveshwara (Springer, 1997) pp 525-548
14. N. Upadhyay, P. Das Gupta and R. P. Saxena, *Physical Review D*, 60, 063513 (1999)
15. V. Gupta, P. Das Gupta and P. N. Bhat, *Bulletin of Astronomical Society of India*, 28, 371 (2000)
16. P. Das Gupta, in *The Universe*, eds. N. Dadhich and A. Kembhavi (Kluwer Academic Publishers, Dordrecht, 2000) pp 105-109
17. V. Gupta, P. Das Gupta and P. N. Bhat, CP526, *Gamma Ray Bursts: Fifth Huntsville Symp.*, eds. R. M. Kippen et al. (American Institute of Physics, 2000) , 215
18. P. N. Bhat, V. Gupta and P. Das Gupta, CP510, *The Fifth Compton Symp.*, eds. M. L. McConnell and J. M. Ryan (American Institute of Physics, 2000), 538
19. Sushil Singh and P. Das Gupta, *Physics Teacher*, 44, S39 (2002)
20. K. Vyonkesh Mani and P. Das Gupta, *Physics Teacher*, 44, S28 (2002)
21. V. Gupta, P. Das Gupta and P. N. Bhat, arXiv:astro-ph/0206402v1

22. K. Vyonkesh Mani and P. Das Gupta, in Recent Trends in Astro and Plasma Physics in India, eds. Sandip K. Chakrabarti et al. (Vedas Publishers, 2003)
23. P. Das Gupta, Pramana, 63, 855 (2004)
24. P. Das Gupta, Pramana, 63, 887 (2004)
25. P. Das Gupta, arXiv:0905.1621v4 [gr-qc]
26. P. Das Gupta, Radiation Effects and Defects in Solids: Incorporating Plasma Science and Plasma Technology, 165, pp 106-113 (2010) (arXiv:0911.3967v1 [gr-qc])
27. P. Das Gupta, S. Raj & D. Chaudhuri, arXiv:1012.0976v1 [cond-mat.mes-hall]
28. P. Das Gupta & N. Rathnasree, Propagation, 2, pp 128-133 (2011)
29. P. Das Gupta, Resonance, 17, pp 254-273 (2012) (arXiv:1105.3402v5)
30. P. Das Gupta, arXiv:1203.5780v1 [gr-qc]
31. P. Das Gupta, Physics Education, 28, 5 (2012) (arXiv:1107.3460v3)
32. P. Das Gupta, Journal of Scientific Review, 4, (2012)
33. P. Das Gupta and Uma Garg (DOI: 10.13140/2.1.1372.8646)
34. P. Das Gupta, [arXiv:1508.06988v2](https://arxiv.org/abs/1508.06988v2) [physics.hist-ph]
35. P. Das Gupta, Current Science, 109, pp 1946-1950 (2015)
36. P. Das Gupta, Astr. Soc. Pac. Conf. Sr., Vol. 501 (ed. B. P. Abbott, 2015), Pp.151-160
37. P. Das Gupta in, Light and its Many Wonders (eds. Ajoy Ghatak, A. Pathak and V. P. Sharma, Viva Books, 2015) pp 51-78

38. P. Das Gupta, in Recent Trends in the Study of Compact Objects (RETCO-II): Theory and Observation, ASI Conference Series, 2015, Vol. 12, pp 1-8 (Edited by Indranil Chattopadhyay, Anuj Nandi, Santabrata Das and Samir Mandal)
39. P. Das Gupta, Sound of Binary Black holes-the first direct detection of Gravitational Waves, Journal of Scientific Review, 6(1) (2016)
40. Patrick Das Gupta and Eklavya Thareja, [Classical and Quantum Gravity](#), [Volume 34](#), 2017
41. Patrick Das Gupta and Nidhi Saini, Journal of Astrophysics and Astronomy, 39: 14 , 2018 ([arXiv:1709.00185v1](#) [[astro-ph.HE](#)])
42. Fazlu Rahman & Patrick Das Gupta, Ecologies of the NEW: Matter, mind & body, Pp. 377-383 (MESMAC, Volume 1, 2018)
43. Patrick Das Gupta & Fazlu Rahman, Proceedings of an International Conference, 'The Physical Universe-2018', eds. S. Wagh, S. Maharaj & G. Chon (CIRI, Nagpur, 2018) [arXiv:1801.02559v2](#) [[gr-qc](#)]
44. Patrick Das Gupta, Proceedings of the 9-th International Conference on Oriental Astronomy, eds. W. Orchiston, A. Sule & M. Vahia (TIFR, Mumbai, 2018), Pp. 47-53 [arXiv:1704.00722](#) [[physics.hist-ph](#)]
45. N. Rathnasree, P. Das Gupta & A. Garg, Proceedings of the 9-th International Conference on Oriental Astronomy, eds. W. Orchiston, A. Sule & M. Vahia (TIFR, Mumbai, 2018), Pp. 17-33
46. P. Das Gupta, 'Three faces of Aharonov-Bohm Phase', in Lectures on Quantum Mechanics: Fundamentals and Applications, eds. Anirban Pathak and Ajoy Ghatak (Viva Books Pvt. Ltd., 2019)
47. P. Das Gupta, 'On Reasonable Effectiveness of Pedagogy of Mathematical Physics', 2019, submitted (https://www.researchgate.net/publication/331687828_On_Reasonable_Effectiveness_of_Pedagogy_in_Mathematical_Physics)

48. P. Das Gupta and M. Sirtaz, 'BLACK HOLE MENAGERIE, CHARGED/DYONIC BHS AND RADIATION FROM INTERACTING DYONIC BH PAIRS' in 'A Guide to Black Holes', edited by Dr. Kenath Arun (2023, Nova Science Publishers, USA).

[arXiv:2306.14473](https://arxiv.org/abs/2306.14473)

[gr-qc]

49. Nidhi Saini and P. Das Gupta, "Observed Trends in FRB Population and Bi-modality in the Luminosity Density Distribution." *arXiv preprint arXiv:2310.11992* (2023).

50. P. Das Gupta, 'Torsion and Chern-Simons gravity in 4D space-times from a Geometrodynamical four-form' in "Spacetime : Proceedings of the Third Minkowski Meeting held in September 2023, in Bulgaria", eds. E.Ling and A. Piubello, (Minkowski Institute Press, Canada, 2024).

51. Ajith, Parameswaran, et al. "Gravitational physics in the context of Indian astronomy: A vision document." *Journal of Astrophysics and Astronomy* 46.1 (2024): 6.

52. Nidhi Saini and P. Das Gupta, *Pramana*, 99, no. 1, p-26 (2025).

53. P. Das Gupta, N. Saini and S. Sur, Magnetars Glitches and Fast Radio Bursts, under review.

VII. Popular Science Articles:

1. P. Das Gupta, *Science Reporter*, May issue, 2002
2. P. Das Gupta, *Science Reporter*, 43, 44-51 (2006)
3. P. Das Gupta, *Quanta* 2008 (Motilal Nehru College), 8-10 (2008)
4. P. Das Gupta, *Quanta* 2009 (Motilal Nehru College), 9-12 (2009)
5. P. Das Gupta, *A.S.K. (St. Stephens College)*, 1, 5 (2009)
6. P. Das Gupta, *Journal of Scientific Review*, 1 (2009)
7. P. Das Gupta, *Journal of Scientific Review*, 2 (2009)

8. P. Das Gupta, Science Reporter, 48, 36-38 (2011)
9. P. Das Gupta, Echo'13 (Physics Journal, St. Stephens College), 6-8 (2013)
10. P. Das Gupta Physion, Vol. 24 (2014) pp 3-4
11. P. Das Gupta in KMC magazine 2015
(https://www.academia.edu/10612741/Soaring_high_on_the_wings_of_Physics)
12. P. Das Gupta, 'The Puzzle of Fast Radio Bursts', Sky World, Vol.1, Issue-II, July-September 2017, pp.11-14.
13. P. Das Gupta, 'Artificial Intelligence, Free Will, Physics and all that useless ruminations', Echo (Physics Journal, St. Stephens College), 6-8, March Issue (2019)

VIII. Recent Invited Lectures:

1. I delivered an invited talk in the Astronomical Heritage: Indo-France Seminar held at IIT, GandhiNagar, in February 2013.
2. I presented an invited lecture on 'Gravitational waves from spinning white dwarfs' in the FTAG-2013 held at IIT, Gandhinagar, during September 5-8, 2013.
3. I gave an invited talk on 'Probing LED gravity using protective measurement' at the Discussion meeting on Quantum Measurements held in IISc, Bangalore, during October 22-24, 2014.
4. I presented an invited lecture on 'Probing large extra-dimension gravity using Bose-Einstein condensates' at the FTAG-2014 held in IISER, Mohali, during December 8-13, 2014.
5. I gave an invited talk on 'Dark energy, Chern-Simons gravity and Torsion from a dynamical four-form' at the Curtain Raiser session of the World Institute for Advance Study, New Delhi, on December 19, 2014.
6. I was invited to deliver a set of lectures on 'Introduction to cosmology and gravitational waves' at the Centennial Celebration of Einstein's General Relativity organized by Tinsukia College in Assam during March 2015.

7. I was invited to deliver the General Relativity Centennial lecture in the conference 'Recent Trends in the Study of Compact Objects - II' held in May 2015 at ARIES, Nainital.
8. I delivered a set of lectures on 'Introduction to Gravitational Waves' in a Summer School on Gravitational Waves Astronomy held at ICTS, Bangalore, during June-July in 2015.
9. I presented a paper on 'Supermassive black holes from Bose-Einstein condensates' in ICGC at IISER, Mohali, during December 14-18, 2015.
10. I was invited to deliver a set of lectures on 'Introduction to gravitational waves' at the National School on Gravitational Waves organized by IUCAA at Kochi during December 2015 - January 2016.
11. I presented an invited lecture on 'Supermassive black holes from Bose-Einstein condensates' at the FTAG-2016 held in SNBNCBS, Kolkata, during February 22-26, 2016.
12. I presented a paper on 'Supermassive black holes from Bose-Einstein condensates' in the International Conference on General Relativity and Gravity held at the Columbia University, New York, during July 10 - 15, 2016.
13. I presented a paper on 'Supermassive black holes from Bose-Einstein condensates' in the Conference on Long Range interactions in many body physics held at the ICTP, Trieste, during July 25 - 29, 2016.
14. I presented a poster paper in the International Conference on Oriental Astronomy held at IISER, Pune, in November 2016.
15. I was invited to deliver a set of lectures on 'Introduction to gravitational waves' at a School on Gravitational Waves organized by Presidency University, Kolkata, and IUCAA, at Kolkata, during December 2016.
16. I was invited to present a lecture on 'The Quantum Magic - Bose-Einstein Condensates and Superfluids' in a National Conference on Frontiers of Physics at the Physics Department, University of Burdwan, during March 30-31, 2017.
17. I presented a paper on 'FRBs from collapse of magnetars' in the conference 'Recent Trends in the Study of Compact Objects - III' held in June 2017 at IIST, Thiruvananthapuram.
18. I presented a paper on 'FRBs and GRBs: Possible common progenitor' in the Workshop on GRBs: Prompt to Afterglows held at NCRA (TIFR), Pune, during July 5-7, 2017

19. I was invited to deliver a lecture on 'Direct detection of gravitational waves' in a conference organized by P.R.L., Ahmedabad, on New Initiatives in Fundamental Science Experiments held in Udaipur during September 12-14, 2017.
20. I was invited to deliver a lecture on 'An outburst on Gravitational Wave Bursts, Radio Bursts and Gamma Ray Bursts' in the Journal Club School of Physical Sciences, JNU, in October 6, 2017.
21. I was invited to deliver a lecture on 'Three faces of quantum phase' in a Workshop on Quantum Physics held at Kalindi College, University of Delhi, on October 6, 2017.
22. I was invited to deliver lectures in many Refresher Courses for Teachers held at Jawaharlal Nehru University, New Delhi, during 2015-2017, on subjects ranging from quantum physics to astrophysics.
23. I was invited to deliver lectures in many colleges of Delhi University like St. Stephen's, Miranda House, Kirori Mal, Hindu, Atma Ram Sanatan Dharma, Sri Aurobindo, Motilal Nehru, Rajdhani, Shivaji, during 2015-2017, on subjects ranging from quantum physics to astrophysics.
24. I was invited to deliver a lecture on Formation of Supermassive black holes in an International Conference on The Physical Universe at Nagpur during 26.2.18 to 1.3.18.
25. BITS, Pilani, had invited me to deliver a lecture on 'Hawking's legacy in Physics' organized to pay homage to Stephen Hawking in April, 2018.
26. I was invited to lecture on 'Gravitational Waves' at IIT, Mandi, in May, 2018.
27. I was invited to give a lecture on 'Recent excitement in the research in Astrophysics' in a workshop on 'Pedagogy and Research in universities' at Amity University, Gwalior, in May, 2018.
28. I delivered a lecture on 'Fast Radio Bursts' in the Feynman Club of St. Stephen's College on 3.8.18.
29. I delivered a set of lectures on 'General Relativity' in SERB preparatory school in Theoretical High Energy Physics at the Central University, Hyderabad, in September, 2018.
30. I was invited to deliver a lecture on 'Dark matter and Dark energy in cosmology' at BITS, Pilani, Hyderabad Campus, in September, 2018.
31. I delivered a lecture on 'Formation of Supermassive Black holes' at BITS, Pilani, Goa Campus, in November, 2018.

32. I was invited to deliver lectures in a conference on 'The Stellar Legacy of Meghnad Saha' held at I.M.Sc., Chennai during January 3-4, 2019.

33. I was invited by I.M.S.C., Chennai, to deliver an outreach lecture on 'Darkness of night and Olbers' paradox' during January 3-4, 2019.

34. I was invited to deliver a lecture in an international conference ICPST-2019 on 'The Puzzle of Supermassive Black holes found at the centres of Active Galactic Nuclei' held in University of Delhi during January 17-19, 2019.

35. I was invited to deliver a lecture in a conference on 'Frontiers in Particle Physics and Cosmology' held in Hyderabad Central University during January 23-25, 2019.

36. I delivered a lecture on 'Direct detection of Gravitational Waves' in the Khalsa College, Delhi University on January 28, 2019.

37. I was invited to give two lectures on 'Dark matter and Dark energy in the Universe' in a 2-day workshop on 'Shedding Light on the Dark Side of the Universe' organized by Hindu College, Delhi University, during February 8-9, 2019.

38. I delivered a lecture on 'Quantum magic and mysteries' at the Kirori Mal College, Delhi University, on February 26, 2019.

39. I was invited to deliver lectures on 'Supermassive Black holes' and 'Gravitational waves' at I.I.T., Jodhpur, during March 30-31, 2019.

40. I was invited to chair a session and present a paper in the conference RETCO-IV held at IUCAA, Pune, during April 17-20, 2019.

41. I was invited by ICTS (TIFR), Bengaluru, to participate in a discussion meeting 'The Future of Gravitational Wave Physics & Astronomy' during August 19-22, 2019.

42. I was invited by NIIT, Neemrana, to inaugurate NU ASTREA, Astronomy Club, and deliver a lecture on October 6, 2019.

43. I was invited to deliver three lectures at the Azim Premji University, Bangalore, during October 10-12, 2019. The talks were: 'Time: An Enigmatic Juggernaut', 'The Magical Realism of Quantum World' and 'Open Sets, Sequences and Continuity'.

44. I was invited as a guest of honour during the inauguration of 8-th DST-INSPIRE internship camp at Punjab University, Chandigarh, as well as give a lecture on October 15, 2019.

45. I was invited by India-Thirty Meter Telescope organization for presenting a paper in a workshop 'I-TMT Science & Instruments' at Nainital during October 17-19, 2019.
46. I was invited by the Deptt. Of Physics, Kumaun University, Nainital, to deliver a lecture on October 19, 2019.
47. I was invited by Indian Institute of Information Technology, Allahabad, to give a lecture in a workshop 'Applications of Data Science in Astrophysics and Gravitational Wave Research', November 1-3, 2019.
48. I was invited by Laser Science & Technology Centre, DRDO (Delhi), to deliver a lecture 'Sir C. V. Raman: His Life and Research Work' on November 7, 2019.
49. I was invited by the Scientific Organizers of 'Advances in Astroparticle Physics & Cosmology (AAPCOS-2020)' to deliver a lecture during January 6-10, 2020, at the Saha Institute of Nuclear Physics, Kolkata.
50. I was invited by TIFR's 'India Based Neutrino Observatory' to deliver an online interactive lecture on 'Exotic Physics from Sterile Neutrinos, Magnetic Monopoles and All that' on June 19, 2020.
51. Invited to give talk in Quantum Technology, Rajouri, J & K
52. I have Two invited talks: GWs and superluminal motion in the Vigyan Samagam
53. I was invited to give a GNDU, Amritsar, webinar
54. I was invited to give a Digboi College Webinar
55. Adventures with BHs: Unfolding the Nobel Prize winning discoveries in Physics, International Webinar, Univ. of Lucknow, October 18-19, 2020
56. International Webinar on SMBH and their formation, Pabna University, Bangladesh
57. Two lectures in the Refresher Course, Baba Jambeswar ..University, Hisar
58. Delivered an invited talk in the ICTS workshop on Less travelled path of dark matter, ICTS, November 9-13, 2020, and chaired the Tuesday session 2.30 - 4 pm, Nov 10.
59. I was invited by IUCAA in 2019 to deliver lectures on Gravitational Radiation for developing SWAYAM course for College Teachers. I gave a set of lectures on 'Propagation and Generation of Gravitational Radiation' in the Ministry of Human Resources Development (INDIA)'s

SWAYAM initiative as part of the ARPIT (NRC) on-line course on Astronomy and Astrophysics.

60. I was invited by NASI-Delhi Chapter on the occasion of Azadi ka Amrit Mahotsav to deliver a Special Public Webinar on August 23, 2021, on 'Mysteries, Clues, Surprises and Creativity in Physical Sciences'. The talk can be accessed at:

<https://www.youtube.com/watch?v=qNObhP7xkHc>

61. I was invited by Vidyut, The Physics Department, Miranda House, DU, invited me to deliver a lecture on 'Stepping stones to Einstein's General Relativity' on September 6, 2021. The talk is available at:

<https://www.youtube.com/watch?v=dhUHpA0lf8Q&t=13s>

62. I was invited by BITS Alumni Colloquium: 2021, organized by the Physics Department, BITS, Pilani, invited me to deliver a lecture on the 'Puzzle of Supermassive Black holes'. I gave the talk on October 5, 2021.

63. I was invited to deliver the prestigious 2021 **Ved Ratna Memorial** lecture on "Gravitational Waves Detectors as our New 'Eyes' to probe the universe". I delivered the talk on October 16, 2021. The lecture is available on YouTube and can be accessed at:

<https://www.youtube.com/watch?v=XDEkUbYMVT0>

64. I was invited to present a lecture entitled 'CHERN-SIMONS GRAVITY , TORSION , DARK ENERGY AND SUPERMASSIVE BLACK HOLES FROM A DYNAMICAL FOUR-FORM' in the **"27th international conference of International Academy of Physical Sciences on Advances in Relativity and Cosmology"** at BITS-Pilani Hyderabad Campus during October 26-28, 2021.

65. I was invited by the Deen Dayal Upadhyaya College, DU, to give a talk on 'The Baffling Universe' on November 26, 2021.

66. I was invited by Sparks - The Physics Society, SGTB Khalsa College, DU, invited me to deliver an online webinar on 'Quantum Magic and Miracles' on January 9, 2022.

My lecture is available at:

<https://www.youtube.com/watch?v=P6Cnvx9FQE4&t=12s>

67. I was invited by the Department of Physics, DHSK College and the Department of Physics, Manipur University organized a National Conference on Physical Sciences **(NCPS-2022)** during 29-30 April 2022. I was invited to deliver a lecture on 'Enigmatic origins of Supermassive Black holes'.

68. Science for Society invited me to present an Interactive Session on 'Let's Talk Science' . This was held on June 12, 2022. The Interactive Session can be accessed at:

<https://www.youtube.com/watch?v=uCHKkwrDuDk&t=4269s>

69. I was invited to give a seminar in the XII-th Field Theoretic Aspects of Gravitation held at BIT, Mesra, during March 17-19, 2023.

70. I was invited to participate in the Quantum Gravity conference held at R.R.I., Bengaluru, in September 2023.

71. I was invited to give a lecture in the Third Minkowski Meeting held in Albena, Bulgaria, in September 2023.

72. I was invited to give the Prof. Jagdishwar Mahanti Distinguished Lecture on October 8, 2025, at the Indian Institute of Technology, Kanpur.

IX. National and International Committees:

1. I was elected as the President of the Indian Association of General Relativity and Gravitation for the term March 2020 to March 2022.
2. I am in the Editorial Board of Resonance, An educational journal of the Indian Academy of Sciences, Bengaluru.
3. I was selected as a member of the International Advisory Committee of XI-th International Conference on Gravitation, Astrophysics and Cosmology of Asia-Pacific Countries, held in Kazakhstan, during October 2013
4. I am a member of Indigo Consortium for gravitational waves detection, and have given a series of lectures on Gravitational Waves and Their Sources held at various IUCAA workshops like

in Tezpur University, Assam, in January, 2012, in BITS-Pilani, Goa Campus, in December, 2012, ICTS, Bengaluru, 2015 and in Kochi, Kerala, during December 28, 2015 - January 1, 2016.

X. Participation in International Olympiads:

1. I was selected by Homi Bhabha Centre of Science Education, TIFR, to lead the Indian delegation of physics students at the International Physics Olympiad held in Tallyn and Tartu, Estonia, during July 2012.

2. I was also selected by Homi Bhabha Centre of Science Education, TIFR, to lead the Indian delegation of physics students at the International Physics Olympiad held in Mumbai, India, during July 2015.

3. I was selected by Homi Bhabha Centre of Science Education, TIFR, to be a member of the Academic Committee for the Tenth International Olympiad on Astronomy & Astrophysics that was held in Bhubaneswar, India, during December 9-19, 2016.

XI. Online Lecture Courses accessible through internet:

1. A set of lectures delivered by me on the 'Introduction to Gravitational Waves' in a Summer School on Gravitational Wave Astronomy organized by ICTS (TIFR), Bengaluru, in 2015:

PROGRAM LINK : <http://www.icts.res.in/program/gws2015>

TALK LINK : <https://www.icts.res.in/program/all/t...>

(a) <https://www.youtube.com/watch?v=81rUhQhTkrE>

(b) <https://www.youtube.com/watch?v=IYW0-vWlhQo>

XII. Outreach Activities via electronic media:

I have been active in popularization of Physics and Astronomy through outreach activities organized by The Institute of Mathematical Sciences, Chennai and Nehru Planetarium, New Delhi, as well as various governmental television programmes of India like Vigyan Prasar, India Science channel and science programmes aired by Rajya Sabha TV, such as:

<https://www.indiascience.in/videos/nobel-prize-2019-physics-of-universe>

<https://www.indiascience.in/videos/back-to-1919-e-confirmation-of-einsteins-theory>

https://www.youtube.com/watch?v=Jm_G4g_52LU

<https://www.newsclick.in/international/detection-gravitational-waves>

<https://www.youtube.com/watch?v=4dfj184TFYk&t=2425s>

<https://www.youtube.com/watch?v=1T2qofipM7Q>

<https://www.youtube.com/watch?v=dR0dc4fo10A&t=881s>

<https://www.youtube.com/watch?v=n5zHJuSxHtQ>

<https://www.indiascience.in/videodetails?id=5c298981cdec7>