

Dr. BUDDHADEV PAL

Department of Mathematics
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Research Experience:

Post Doctorate (February 2014 to January 2016):

- NBHM PDF from 03/02/2014 to 01/12/2014 under **Dr. Arindam Bhattacharyya** (Associate Professor, Department of Mathematics, Jadavpur University) on **applications of computational and differential geometry**.
- DR. DSK PDF from 02/12/2014 to 29/01/2016 under **Prof. Manjusha Majumdar (Tarafdar)** (Professor, Department of Pure Mathematics, University of Calcutta) on **some Riemannian Manifolds and their applications to general theory of relativity**.

Teaching Experience:

Teaching under graduate classes B.A./B.Sc and post graduate classes M.A./M.Sc. as Assistant Professor at Department of Mathematics, Banaras Hindu University, Varanasi, from 1st February, 2016 to till date.

Ph.D. Details (2010-2014):

Thesis Title: “APPLICATIONS OF COMPUTATIONAL AND DIFFERENTIAL GEOMETRY”

Supervisor: Prof. Arindam Bhattacharyya, Department of Mathematics, Jadavpur University, Kolkata, India.

Educational Qualification:

Degree/ Examination	Institution	University/ Board	Subjects	Year	Percentage/ CGPA
Ph.D. (Differential Geometry)	Department of Mathematics Faculty of Science	Jadavpur University	Computational and Differential Geometry	2014	Degree obtained in 2014
M. Sc. (Mathematics)	Department of Mathematics Faculty of Science	Jadavpur University	Mathematics Differential Geometry(special)	2009	68.5%
B.Sc. (Maths. Hons.)	Department of Mathematics Faculty of Science	Jadavpur University	Mathematics (Hons.), Physics, Chemistry	2007	74.08%

Higher Secondary (XII)	B.R.K. Institution	W.B.C.H.S.E	Mathematics, Chemistry, Physics, Biology(additional), English, Bengali	2004	81.0%
Secondary (X)	Panchal High School	W.B.B.S.E	English, Bengali, Mathematics, Physical science, Life Science, Geography, History	2002	78.5%

Details of Professional Recognitions, Awards, Fellowship Honours Received:

Award Type	Award Name	Awarding Institution or Body	Date
National	CSIR-UGC NET (Mathematical Sciences)	CSIR-HRDG	June, 2011
National	CSIR SRF (EXT)	CSIR	01/10/2014
National	NBHM POST DOC	NBHM	04/12/2013
National	Dr. DSK Post Doc Fellowship	UGC	08/08/2014

Areas of Research Interest:

- Riemannian Geometry
- Curves and Surfaces
- Computational Geometry

List of Publications

1. SCI-Exp journals:

[1] S. Pahan, **B. Pal** and A. Bhattacharyya, On Einstein Warped Products with a Quarter-Symmetric Connection, *International Journal of Geometric Methods in Modern Physics*, 14 (2017), no. 4, 1750050, 15 pp., **IF: 1.874, Q2**.

[2] S. Pahan, **B. Pal** and A. Bhattacharyya, On Compact Super Quasi Einstein Warped Product with Non Positive Scalar Curvature, *Journal of Mathematical Physics, Analysis, Geometry*, 13 (2017) pp. 1-11., **IF:0.585, Q3**.

[3] S. Pahan, **B. Pal** and A. Bhattacharyya, Characterization on a non-flat Riemannian Manifold, *Proceedings of the National Academy of Sciences, India Section A: Physical Sciences*, 88 (2018) 41–47., **IF: 1.544, Q3**.

[4] **B. Pal** and P. Kumar, Compact Einstein multiply warped product space with non positive scalar curvature, *International Journal of Geometric Methods in Modern Physics*, Vol. 16, No. 10 (2019) 1950162 (14 pages)., **IF: 1.874, Q2.**

[5] S. Pahan and **B. Pal**, On Einstein Sequential Warped Product Spaces, *Journal of Mathematical Physics, Analysis, Geometry*, Vol. 15, No. 3, 2019, pp. 379 – 394., **IF:0.585, Q3.**

[6] **B. Pal** and P. Kumar, A family of multiply warped product semi-Riemannian Einstein metrics, *Journal of Geometric Mechanics*, 12 (4), 553, (2020)., **IF: 0.857, Q2.**

[7] **B. Pal** and A. Yadav, Some characterizations of rectifying curves in the 3-dimensional hyperbolic space $H^3(-r)$, *Hacettepe Journal of Mathematics and Statistics*, 50 (1), 235-242, (2021)., **IF: 0.975, Q3.**

[8] **B. Pal** and P. Kumar, On Einstein warped product space with respect to semi symmetric metric connection, *Hacettepe Journal of Mathematics and Statistics*, 50 (5) (2021), 1477 – 1490., **IF: 0.975, Q3.**

[9] **B. Pal** and P. Kumar, Einstein Poisson warped product space, *Classical and Quantum Gravity*, 38 (6), 065004., (2021)., **IF: 3.528, Q1.**

[10] N. Bhunia, **B. Pal** and A. Bhattacharyya, A new way to study on generalized Friedmann-Robertson-Walker space-time, *Indian Journal of Physics*, has been accepted for publication., **IF: 1.947, Q3.**

2. Scopus journals:

[1] K. Halder, **B. Pal**, A. Bhattacharyya and T. De, Characterization of Super Quasi-Einstein Manifold, *Analele Stiintifice Ale Universitatii "AL.I.CUZA" Din Iasi (S.N.) Matematica*, Vol. 60 (2014), 99-108., **Q4.**

[2] A. Bhattacharyya and **B. Pal**, Volume of a Tetrahedron Revisited, *Demonstratio Mathematica*, Vol 47, No. 1(2014), pp. 253-257., **Q2.**

[3] **B. Pal** and A. Bhattacharyya, Spherical chains inside a spherical segment, *Palestine Journal of Mathematics*, Vol. 4, no. 2, 2015, 277–283.

[4] S. Pahan, **B. Pal** and A. Bhattacharyya, On Ricci flat warped products with a quarter-symmetric connection, *Journal of Geometry*, Vol 107 (2016), 627-634., **Q3.**

[5] **B. Pal** and A. Bhattacharyya, On nearly quasi-Einstein warped products, *Novi Sad J. Math.*, Vol. 46 (2016), 45-51., **Q3.**

[6] S. Dey, **B. Pal**, and A. Bhattacharyya, On some classes of Mixed -super Quasi-Einstein Manifolds, *Acta Universitatis Sapientiae, Mathematica*, Vol. 8, 1 (2016) 32–52., **Q3.**

[7] S. Pahan, **B. Pal** and A. Bhattacharyya, Multiply warped products as quasi-Einstein manifolds with a quarter-symmetric connection, *Rendiconti dell'Istituto di Matematica dell'Università di Trieste*, 48 (2016), 587–605., **Q4**.

[8] S. Pahan, **B. Pal** and A. Bhattacharyya, Multiply Warped Product on Quasi-Einstein Manifold with a Semi-Symmetric Non-Metric Connection, *Acta Mathematica Academie Paedagogicae Nyíregyháziensis*, 33 (2017), no. 1, 103–114., **Q4**.

[9] **B. Pal**, S. Dey and S. Pahan, On a non flat Riemannian warped product Manifold with respect to quarter-symmetric Connection, *Acta Universitatis Sapientiae, Mathematica*, 11, 2 (2019) 332-349., **Q3**.

[10]. S. Kumar and B. Pal, K-type slant helices on space-like and time-like surfaces, *ACTA ET COMMENTATIONES UNIVERSITATIS TARTUENSIS DE MATHEMATICA*, Vol. 25 No. 2 (2021), 201-220., **Q3**.

3. ESCI journals:

[1] **B. Pal**, Homology of a type of pentahedron, *Journal of Dynamical Systems and Geometric Theories*, Vol. 12, no. 2, 2014, 159-164.

[2] **B. Pal** and A. Bhattacharyya, A characterization of warped product on mixed super quasi-Einstein manifold, *Journal of Dynamical Systems and Geometric Theories*, Vol. 12, no 1, 2014, 29-39.

[3] S. Pahan, **B. Pal** and A. Bhattacharyya, Characterization on mixed super quasi-Einstein manifold, *Tbilisi Mathematical Journal*, Vol. 8, no. 2, 2015, 115-129.

[4] **B. Pal**, On mixed super quasi-Einstein warped products, *Journal of Dynamical Systems and Geometric Theories*, Vol. 14 (2016), 35-50.

[5] S. Dey, **B. Pal** and A. Bhattacharyya, Some classes of Lorentzian α -Sasakian Manifolds with respect to Quarter-symmetric Metric Connection, *Tbilisi Mathematical Journal*, 10(4) (2017), pp. 1–16.

[6] S. Dey, **B. Pal** and A. Bhattacharyya, REGULARIZATION OF HEPTAHEDRA USING GEOMETRIC ELEMENT TRANSFORMATION METHOD, *European Journal of Pure and Applied Mathematics*, Vol. 11, No. 1, 2018, 315-330.

[7] S. Dey, **B. Pal** and A. Bhattacharyya, A non-flat Riemannian manifold admitting certain vector fields, *Journal of Dynamical Systems and Geometric Theories*, Vol. 17(2) 2019, 221–237.

4. UGC CARE List journals:

[1] S. Dey, **B. Pal** and A. Bhattacharyya, Homology of a type of Heptahedron, *Journal of the Calcutta Mathematical Society*, 13, (1) 35–40 (2017).

5. Other peer reviewed journals:

- [1] A. Bhattacharyya and **B. Pal**, Quality Statistics of Octahedron and Decahedron with the help of C-Programs, *Int. J. Pure Appl. Sci. Technol.*, 1(2) (2010), pp. 26-41.
- [2] A. Bhattacharyya and **B. Pal**, Well-Centeredness of Pentahedron and Pyramidisation of Simple 3D Shapes with P-Well-Centered Pentahedra, *Int. J. Contemp. Math. Sciences*, Vol. 6, 2011, no. 28, 1379 – 1396.
- [3] **B. Pal**, A. Bhattacharyya and M. Tarafdar, On Mixed Super Quasi-Einstein Viscous Fluid Space-time, *Tensor (N.S), Japan*, Vol. 74, No. 2(2013), pp. 164-171, #6.
- [4] **B. Pal** and A. Bhattacharyya, Regularization and Energy Estimation of Pentahedra (Pyramids) using Geometric Element Transformation Method, *International Journal of Mathematical Combinatorics*, Vol. 1, 2014, 67-79.
- [5] A. Bhattacharyya and **B. Pal**, ALMOST PSEUDO RICCI SYMMETRIC VISCOUS FLUID SPACETIME, *International Journal of Mathematical Combinatorics*, Vol.4 (2015), 41-52.
- [6] S. Dey, **B. Pal**, and A. Bhattacharyya, Spherical chains inside a spherical segment, *International Journal of Mathematical Combinatorics*, Vol.4 (2016), 153-160.
- [7] S. Dey, **B. Pal** and A. Bhattacharyya, Some classes of Lorentzian α -Sasakian Manifolds admitting Quarter-symmetric Metric Connection, *Acta Universitatis Palackianae Olomucensis Facultas Rerum Naturalium, Mathematica*, Vol. 55 (2016), No. 2, 41–55.
- [8] S. Pahan, **B. Pal** and A. Bhattacharyya, Characterization on Mixed Generalized Quasi-Einstein Manifold, *Acta Universitatis Palackianae Olomucensis Facultas Rerum Naturalium, Mathematica*, Vol. 55 (2016), No. 2, 143–155.
- [9] S. Dey, **B. Pal** and A. Bhattacharyya, Warped Product and Quasi-Einstein Metrics, *Caspian Journal of Mathematical Sciences*, Vol. 6, no. 1, 2017, 1-8.
- [10] S. Pahan, **B. Pal** and A. Bhattacharyya, Multiply warped product on quasi-Einstein manifolds with a semi-symmetric metric connection, *An. Univ. Oradea, fasc. Mat*, Vol. 24 (2017), No. 1, 171-183.

Participation in Conference / Seminar / Symposia / Workshop:

1. **Oral Presentation** given in the National Conference on Mathematics and its Applications (NCMA - 2011), held on 13-14, January, 2011, Jadavpur University.
2. **Oral Presentation** given in the 4th Annual Conference of Tensor Society on Application of Tensors and Differential Geometry in Engineering and Physical Sciences held on October, 8-9, 2011, SRMGPC, Lucknow.
3. **Oral Presentation** given in the International Conference on Dynamical Systems: Theory and Applications (ICDS-2012) held during 11-14, January, 2012, Jadavpur University.

4. **Oral Presentation** given in the 17th International Summer School on **Global Analysis and its Applications**, *satellite meeting of 6th European Congress of Mathematics*, at Department of Physics, Mathematics and Techniques, **University of Presov, Slovakia**, held on 17-22, August 2012, Levoca, Slovakia.
5. **Poster Presented** in the National Conference on Tustainable Development through Innovative Research in Science and Technology, organized by Jadavpur University on September 28 and 29, 2012 under DST PURSE Programme.
6. **Oral Presentation** given in the International Conference on Differential Geometry and Relativity (in collaboration with The Tensor Society) held on November, 20-22, 2012, AMU, Aligarh.
7. **Oral Presentation** given in the 12th International Conference of Tensor Society (Japan) on Differential Geometry and Its Applications and Informatics Besides held during 17-21, December, 2012, organized by Dept. of Pure Mathematics, University of Calcutta.
8. **Oral Presentation** given in the 79th Annual Conference of Indian Mathematical Society held during 28-31, December, 2013, organized by RSET.
9. **Oral Presentation** given in the International Conference on Geometry and its Applications held on October 16-18, 2014, organized by Dept. of Mathematics, Jadavpur University (in collaboration with Tensor Society of India), Kolkata.
10. **Oral Presentation** given in the International Conference on Current Developments in Mathematics and Mathematical Sciences held on December 19-21, 2014, organized by Calcutta Mathematical Society, Kolkata, India.
11. **Oral Presentation** given in the for National Seminar on Recent Advances in Applied Mathematics and its Computational Aspects held on March 25-27, 2015, organized by Deptt. of Applied Mathematics, University of Calcutta, India.
12. **Oral Presentation** given in International Conference on Nonlinear Dynamics, Analysis and Optimization held on December 09-11, 2015, organized by Department of Mathematics, Jadavpur University, India.
13. Selected and attended the Instructional **workshop** on Differential Geometry held at Calcutta University, during January, 15-18, 2011.
14. Selected and attended the one day seminar on Emerging Trends in Gravitation and Cosmology held at the Department of Physics, Jadavpur University, on 15th March, 2011.
15. Selected participant from India by the Scientific Committee of CIMPA and UGM-CIMPA **School** 2011 on Non-Linear Computational Geometry at Department of Mathematics, FMNS-UGM, **Yogyakarta, INDONESIA** and participated to the school for 54 hours, held on July 18-29, 2011.
16. Selected and attended the one day seminar on Emerging Trends in Gravitation and Cosmology held at the Department of Physics, Jadavpur University, on 20th March, 2012.
17. Selected and attended National Seminar on Indian Mathematics and Astronomy and their Relevance in the 21st Century (NSIMAR - 2012) held during 21-22, July, 2012, M. C. Chaki Centre for Mathematics and Mathematical Science.
18. Selected and attended in the Conference in Number Theory held during 12-14, December, 2012, organised by the Dept. of Mathematics, Jadavpur University.

19. Selected and attended in the National Conference on Emerging Trends in Physics of Fluids & Solids held during 27-28, February, 2013, organised by the Dept. of Mathematics, Jadavpur University.
20. Selected and attended in the National **Workshop** on Applied Optimization held during 29-30, June 2013, organised by Department of Basic Science & Humanities, CEMK, WB.
21. Selected and attended in the National Seminar to Commemorate the Sesquicentennial Birth Anniversary of “Sir Austosh Mookerjee” held during 6-8, December 2013, organised by Calcutta Mathematical Society, WB.
22. Selected and attended in the National **Workshop** on Differential Geometry held during 23-27, October 2013, organised by Centre for Mathematical Sciences, Banasthali University.
23. Selected and attended in the National Conference on Recent Developments in Mathematics and its Applications held on March 12, 2014, organized by Dept. of Pure Mathematics, University of Calcutta, Kolkata.
24. Selected and attended in the National **Workshop** and Conference on Discrete Mathematics and its Applications held on March 10-14, 2014, organized by Dept. of Mathematics, Jadavpur University, Kolkata.
25. Selected and attended in the ATM school, **Workshop** on Differential Geometry held during 04-09, August, 2014, organized by Dept. of Mathematics, Savitribai Phule Pune University, Pune, India.
26. Attain and **present a paper** in the 19th International Conference of International Academy of Physical Sciences (CONIAPS XIX), during 17-19, October, 2016 in the Department of Mathematics and Department of Computer Science, D S B Campus, Kumaun University, Nainital.
27. Attain and **present a paper** in the International Conference of The Indian Mathematics Consortium in cooperation with American Mathematical Society, during 14-17, December, 2016 in the DST – Centre for Interdisciplinary Mathematical Sciences, Institute of Science, Banaras Hindu University, Varanasi, India.
28. Attain **76th Orientation Course**, during 15th November to 12th December, 2016 in Banaras Hindu University, Varanasi, India.
29. Attain and delivered **a invited lecture** in ICGMMCP-2017 during 5 – 7, December 2017 in Calcutta Mathematical Society, Kolkata.
30. Attain and **present a paper** in the 21th International Conference of International Academy of Physical Sciences (CONIAPS XXI), during 28 – 30, October, 2017 in Guru Jambheshwar University of Science & Technology, Haryana.
31. Attain and **present a paper** in DGACON – 2018, during 3 – 5, August, 2018 in the Dept. of Mathematics, Nehru Gram Bharati, Allahabad.
32. Attain and delivered **a invited lecture** in ESAMS-2019, in the Deptt. of Mathematics, BHU during 19-20, January, 2019.
33. Attain **Winter School in Basic Sciences (ID)**, during 26th February to 18th March, 2019 in Banaras Hindu University, Varanasi, India.
34. Selected participant from India by the Scientific Committee of CIMPA and CIMPA Research **School** 2022 on Finsler Geometry and Applications, organized by DST-CIMS, BHU, India during December 05-15, 2019.

35. **Organized a National Conference** on Recent Trends in Geometry and their Applications during 08-09 February, 2020 in the Department of Mathematics, BHU.

36. Attain and delivered **a invited lecture** in International Web Conference on Complex Analysis and Differential Geometry: Revisiting during 29-30 June, 2020.

37. Attain a Online **Workshop** on Emerging Areas in Mathematics (WEAM-2021) during 10-17 July, 2021 in Calcutta Mathematical Society, Kolkata, India.

38. Attain and **present a paper** in the 27th International Conference of International Academy of Physical Sciences (CONIAPS XXVII), on Recent Advances in Differential Geometry and Topology during 26-28 October, 2021 in Central University of Punjab, Bathinda, India.

39. Selected participant from India by the Scientific Committee of CIMPA and CIMPA-CMS Research **School** 2022 on Groups and Geometry, held in hybrid mode and organized by Calcutta Mathematical Society, Kolkata, India during January 18-27, 2022.

Languages Known:

S. No	Language	Speaking	Reading / Writing
1.	English	Yes	Yes
2.	Hindi	Yes	Yes
3.	Bengali	Yes	Yes

Personal Profile:

Name : Dr. Buddhadev Pal

Father's Name : Umapada Pal

Mother's Name : Anna Pal

Date of Birth : 24/03/1986

Marital Status : Single

Nationality : Indian

Religion : Hindu

Permanent Address:

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Declaration: I hereby declare that the information given above is true to the best of my knowledge.

BuddhaDev Pal.

Place: Kolkata, India

(BUDDHADEV PAL)