

SHIBESH KUMAR JAS PACIF

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Gyan Khand-1, Indirapuram,
Ghaziabad 201014,
Uttar Pradesh, India

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Email: shibesh.math@gmail.com

BIRTH: 22 June 1980, Male

EDUCATION:

Banaras Hindu University, Varanasi, India
Ph.D. (Mathematics, Specialization: Relativity & Cosmology) **2011**
Department of Mathematics, Faculty of Science
Thesis: Some Studies on Cosmological Models in General Relativity
Advisor: Prof. Abdussattar

Sambalpur University, Odisha, India
M. Phil. (Mathematics, Specialization: Gravitation) **2003**
School of Mathematical Sciences
Dissertation: Some physical distributions in general theory of relativity
Advisor: Prof. G. Mohanty

M. Sc. (Mathematics, Specialization: Graph Theory) **2002**
School of Mathematical Sciences
Dissertation: Entire functions and Weirstrass factorization theorem
Advisor: Prof. N. Das

B. Sc. (Science: Mathematics, Physics, Chemistry) **2000**
Dalmia College, Rajgangpur, Odisha

School Boards, Odisha, Bhubaneswar, India
10+2 (Science: Mathematics, Physics, Chemistry) **1997**
Council of Higher Secondary Education, Odisha

Matriculation **1995**
Board of Secondary Education, Odisha

RESEARCH:

NBHM Post-Doctoral Fellow **2015 - 2018**
Mentor: Prof. M. Sami
Centre for Theoretical Physics
Jamia Millia Islamia, New Delhi, India
Topic: In Search of a Realistic Model of the Universe: Theoretical Constructions and Explanations to Observations

AWARDS &

ACHIEVEMENTS:

Post-Doctoral Fellowship **2015**
National Board of Higher Mathematics, Department of Atomic Energy

UGC Research Fellowship **2007**
University Grant Commission

First position in B. Sc. (PCM Pass), Sambalpur University **2000**

Second position in M. Sc. entrance examination in Sambalpur University **2000**

INNOVATIONS:

Science Popularization: I am an avid Science Popularizer and Science Communicator.

Public Speaking: Expert in demonstrating and delivering lectures on basic astronomy and cosmology in schools, colleges, Universities and other gatherings.

Taramandal: Engaged in a mobile planetarium program for school students.

RECOGNITIONS:

Chief Guest at Vivekananda College, Delhi University on 29th Jan 2020 for a program.

Chaired a session at a National Conference at Ramswaroop Memorial University, Lucknow on 24th Feb 2019.

Reviewer of some esteemed journals: Classical and Quantum Gravity (IOP Publishing), Modern Physics Letters A (World Scientific Publishing), Physics Scripta (IOP Publishing), Canadian Journal of Physics (Springer Publishing), Physics and Astronomy International Journal (Med Crave Publishing).

Associate Editor of Physics and Astronomy International Journal.

MEMBERSHIPS:

Life member of Indian Association of General Relativity and Gravitation

Sessional Member of the Indian Science Congress Association

TEACHING

EXPERIENCE:

Assistant Professor (Senior) Department of Mathematics School of Advanced Sciences Vellore Institute of Technology, Vellore	Nov 2018 - Present
Post-Doctoral Fellow Centre for Theoretical Physics Jamia Millia Islamia, New Delhi	Jan 2016 - Apr 2018
Assistant Professor Department of Mathematics Manipal University Jaipur, Jaipur	Jul 2014 - Apr 2015
Associate Professor Department of Applied Sciences IEC College of Engineering and Technology, Greater Noida	Jul 2013 - May 2014
Assistant Professor Department of Applied Sciences & Humanities ITM University, Gurgaon	Dec 2012 - Jun 2013
Assistant Professor Department of applied Mathematics JSS Academy of Technical Education, Noida	Mar 2008 - May 2012

TEACHING

INTERESTS:

Specialization: Applied Mathematics

Current Teachings: Linear algebra, Differential equations, Calculus

Subjects Taught: Mathematical Physics, Engineering Mathematics, Differential Equations, Linear Algebra, Basic Statistics, Operations Research, Graph Theory, Modelling & Simulation, Industrial management, Value Education.

ADMINISTRATIVE EXPERIENCE:

Proctor Vellore Institute of Technology, Vellore	June 2019-
Asst. coordinator , University Examination JSS Academy of Technical Education, Noida	May 2012
Assistant Nodal officer , University Examination JSS Academy of Technical Education, Noida	Dec 2008

RESEARCH INTEREST:

Core area: Relativity & Cosmology

Work area: Cosmological modelling, Problems of standard models e.g. initial singularity problem, age problem, all-time decelerated expansion problem etc., Exact solutions of EFEs, Dark energy, Cosmological parametrization, Reconstruction, Observational constraints, Dynamical system analysis, Cosmological diagnostics of various Scalar field models of Dark energy, Alternative theories of gravity e.g. $f(R, T)$, $f(R)$, $f(Q, T)$ theories of gravity.

RESEARCH/ACADEMIC VISITS:

International

University of Belgrade, Belgrade, Serbia To attend the 10th Mathematical Physics Meeting: School and Conference on Modern Mathematical Physics & gave a talk.	09 - 14 Sept 2019
Yangzhou University, Yangzhou, China To attend the first symposium of the BRICS Association of Gravity, Astrophysics and Cosmology, Centre of Gravity and Cosmology.	18 - 20 Oct 2017

National

International Centre for Cosmology, Gujarat	18 - 23 Nov 2019
Centre for Theoretical Physics, New Delhi	09 - 10 Jul 2019
Inter-University Centre for Astronomy and Astrophysics, Pune	
15 Aug 2018 – 15 Sept 2018,	24 Dec 2017 – 08 Jan 2018,
04 Jan 2017 – 09 Jan 2017,	14 Dec 2015 – 24 Dec 2015
25 Nov 2013 – 05 Dec 2013,	25 Mar 2007 – 22 Apr 2007

SHORT TERM COURSES:

Cosmology

MHRD-GIAN (Global Initiative for Academic Networks) Courses

1. *Cosmological Structure Formation*, Centre for Theoretical Physics, Jamia Millia Islamia, New Delhi, **09-14 Apr 2018**
2. *On the Viability of Theories beyond Einstein's General relativity*, Centre for Theoretical Physics, Jamia Millia Islamia, New Delhi, **18-23 Dec 2017**
3. *Introduction to Cosmological Perturbation Theory*, Centre for Theoretical Physics, Jamia Millia Islamia, New Delhi, **16-23 Dec, 2016**
4. *Origin and Evolution of Perturbations during Inflation and Reheating*, Department of

Physics, Indian Institute of Technology Madras, Chennai, **25-30 Nov 2016**

5. *Probing Large Structure of the Universe using Weak Lensing*, Centre for Theoretical Physics, Jamia Millia Islamia, New Delhi, **07-12 Mar 2016**

Cosmological and Theoretical Applications of Exact Solutions of Einstein's Equations, Centre for Theoretical Physics, Jamia Millia Islamia, New Delhi, **12-23 Feb, 2016**

Soft Skills

1. ASTRONOMY <#CODE> CAMP: Organized by Nehru Planetarium, New Delhi, **16-30 June 2018**
2. Three-day workshop on “basic programming using PYTHON” offered by FOSSEE project, IIT Bombay, Nehru Planetarium, New Delhi, **19-21 June 2018**

Faculty Development Programs at Academic Staff College, VIT, Vellore

1. A Complete Understanding on Machine Learning with Hands on using Scikit-Learn
02 - 03 Mar 2020
2. Research Proposal Writing and Approaches for National and International Grants
06 - 06 Mar 2020
3. Prevention of Sexual Harassment @ Workplace
29 - 29 Aug 2019
4. Memory and Mind Dynamics for Peak Performance
11 - 11 Apr 2019
5. Faculty Approach to Students-Psychological Dimensions
04 - 04 Mar 2019
6. Living your life in the happiest possible way
22 - 22 Jan 2019
7. Digital Online Content Creation in Basic Sciences
19 – 19 Jan 2019

PUBLICATIONS:

PEER REVIEWED

SCOPUS JOURNALS:

S N	Title of the Paper	Journal Name	Year, Vol	Page No.	ISSN No.	IF	Authorshi p & Co- authors
1	Effective equation of state in modified gravity and observational constraints	Classical and Quantum Gravity	2020, 00	00000 0	1361- 6382	3.071	Joint Author, 3
2	f(Q;T) gravity models with observational constraints	Physics of the Dark Universe	2020, 30	10066 4	2212- 6864	4.473	Joint Author, 3
3	Accelerating universe in hybrid and logarithmic teleparallel gravity	Physics of the Dark Universe	2020, 28	10055 1	2212- 6864	4.473	Joint Author, 3
4	Viability of the R+eT cosmology	General Relativity and Gravitation	2020, 52	32	1572- 9532	2.030	Joint Author, 2
5	Cosmic acceleration sourced by modification	International Journal of	2019, 16	19501 28	1793- 6977	1.287	Correspon ding

	of gravity without extra degrees of freedom	Geometric methods in Modern Physics	(08)				author, 3
6	Cosmic acceleration from coupling of known components of matter: Analysis and diagnostics	International Journal of Modern Physics D	2019, 28 (06)	19500 83	1793-6594	2.008	Corresponding author, 4
7	An accelerating cosmological model from a parametrization of Hubble parameter	Modern Physics Letters A	2019, 35 (05)	20500 11	1793-6632	1.367	First, Corresponding author, 3
8	Anisotropic cosmological models with two fluids	Advances in High Energy Physics	2018, 2018	63068 48	1687-7365	1.731	Joint Author, 2
9	Bouncing cosmology in $f(R, T)$ gravity	Physical Review D	2018, 97	12353 6	2470-0029	4.380	Joint Author, 3
10	Analysis with observational constraints in Λ -cosmology in $f(R, T)$ gravity	European Physical Journal C	2018, 78 (11)	946	1434-6052	4.389	Corresponding author, 4
11	Reconstruction of Cosmic History from a Simple Parametrization of H	International Journal of Geometric Methods in Modern Physics	2017, 14	17501 11	1793-6977	1.287	First, Corresponding author, 2
12	LRS Bianchi-I cosmological model with constant deceleration parameter in $f(R, T)$ gravity	International Journal of Geometric Methods in Modern Physics	2017, 14	17501 58	1793-6977	1.287	Joint Author
13	Dark energy cosmological models with general forms of scale factor	European Physical Journal Plus	2017, 132 (10)	429	2190-5444	3.228	Joint Author, 2
14	Dynamics of Bianchi VI _{h=1} Universe with bulk viscous fluid in modified gravity	International Journal of Geometric Methods in Modern Physics	2017, 15 (3)	18500 36	1793-6977	1.287	Joint Author, 2

15	Statefinder diagnostic for modified Chaplygin gas cosmology in $f(R, T)$ gravity with particle creation	International Journal of Geometric Methods in Modern Physics	2017, 15 (3)	18500 49	1793-6977	1.287	Joint Author, 2
16	Galileons, phantom fields, and the fate of the Universe	European Physical Journal C	2016, 76	410	1434-6052	4.389	Joint Author, 2
17	Bianchi type string cosmological models in $f(R, T)$ gravity	European Physical Journal Plus	2016, 131	333	2190-5444	3.228	Joint Author, 3
18	FLRW non-singular cosmological model in general relativity	Research in Astronomy and Astrophysics	2015, 15 (12)	2141	1674-4527	1.512	First, Corresponding author, 1
19	Anisotropic Cosmological Model with a Specific form of Hubble Parameter	Astrophysics and Space Science	2015, 360	48	1572-946X	1.620	First, Corresponding author, 1
20	On Simultaneous Variation of Some Cosmological Parameters in Presence of Interacting Dark Energy	European Physics Journal Plus	2014, 129	244	2190-5444	3.228	First, Principal/Corresponding author, 1
21	Role of Deceleration Parameter and Interacting Dark Energy in Singularity Avoidance	Astrophysics and Space Science	2011, 331	657	1572-946X	1.620	Principal/Corresponding author, 1
22	LRS Bianchi type-I Perfect Fluid Cosmological Model with Modified Generalized Chaplygin Gas Equation of State	Astrophysics and Space Science	2011, 332	455	1572-946X	1.620	Principal/Corresponding author, 1
23	Friedmann-Robertson-Walker Models with Late-Time Acceleration , Chinese Physics	Chinese Physics Letters	2011, 28 (2)	02980 3	1741-3540	1.080	Principal/Corresponding author, 1

Letters

24	An Exact Chameleon Cosmological Model Unifying Phantom Inflation with Late-Time Acceleration	International Journal Theoretical Physics	2011, 50	2355	1572-9575	1.347	Principal/Corresponding author, 1
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OTHER JOURNAL

PEER REVIEWED:

1	Cosmological parametrizations and their scalar field descendants	Physics and Astronomy International Journal	2017, 1(6)	00038	2576-4543	No IF	First, Corresponding author, 2
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CONFERENCE

PROCEEDINGS:

1	On Simultaneous Variation of Some Cosmological Parameters	Proc. 3rd Int. Conf. APMSCSET-2014	2014	69		No IF	First, Corresponding author, 1
2	Non-existence of string cosmological model in kink space-time	Proc. 2nd Nat. conf. WMVC-2003, Jalpaiguri	2003	144	No	No IF	Corresponding author, 2

INVITED TALKS:

1. *"The Universe & Mathematical modelling"*: Webinar talk given **as a resource person** at JSS academy of Technical Education, Noida, **11 June 2020**.
2. *"The Universe and our Current Understanding"*: Talk given **as an invited speaker** at 2nd National Conference on Recent Trends in Mathematics with Applications, Department of Mathematics, Shri Ramswaroop Memorial University, Lucknow, **30-31 Jan 2020**.
3. *"The Universe & Mathematical Cosmology"*: Talk given **as a chief guest** in a program at Vivekananda College, Delhi University, Delhi, **29 Jan 2020**.
4. *"Theories of Gravitation and Cosmological Modelling"*: Webinar talk given **as a resource person** at Stellar Universe, Delhi, **29 Sept 2019**.
5. *"Scalar fields models of Dark Energy"*: Talk given **as a resource person** at Stellar Universe, Delhi **24 Feb 2019**.
6. *"Cosmological Models and Dark Energy"*: Talk given **as an invited speaker** at the National Conference on Recent Trends in Mathematics with Applications, Department of Mathematics, Shri Ramswaroop Memorial University, Lucknow, **21 - 22 Feb 2019**.

TALKS GIVEN DURING VISITS/ IN MEETINGS:

1. “*Cosmological Modelling with Dark Energy: Parametrization and Reconstruction*”: A talk given during a visit at International Centre for Cosmology, Charusat, Gujarat, **21 Nov 2019**.
2. “*Science Popularization and Technical Proposal for a Planetarium*”: A talk given during a visit at International Centre for Cosmology, Charusat, Gujarat, **22 Nov 2019**.
3. “*An Accelerating Cosmological Model from a Parametrization of Hubble Parameter*”: Talk given at 10th Mathematical Physics Meeting: School and Conference on Modern Mathematical Physics in **University of Belgrade, Belgrade, Serbia, 09-14 Sept 2019**.
4. “*A Singularity Free Cosmological Model in General Relativity*” talk given in the Saha Theory workshop: Cosmology at the Interface, Theory Division, Saha Institute of Nuclear Physics, Kolkata, **28-30 Jan 2015**.

PAPER PRESENTATIONS IN CONFERENCES:

1. “*Reconstruction of Cosmic History from a Simple Parametrization of H* ” presented in the National Conference on Differential Geometry and General Relativity, Department of Mathematics, Sardar Patel University, Gujarat, **28-29 Nov 2017**.
2. “*Anisotropic Cosmological Models with a Specific form of Hubble Parameter*” presented in the International Conference on General Relativity, Sant Gadge Baba Amravati University, Amravati, **25-28 Nov 2015**.
3. “*On Simultaneous Variation of Some Cosmological Parameters in presence of Interacting Dark Energy*” presented in the International Conference on Recent Advances in Mathematics, (ICRAM), Rastrasant Tukadoji Maharaj Nagpur University, Nagpur, **20-23 Jan 2014**.
4. “*On Simultaneous Variation of Some Cosmological Parameters*” presented in the International Conference on Recent Advances in Mathematical Sciences and Applications, (ICRAMSA), Rajiv Gandhi Proudhyogiki Vishwavidyalaya (RGPV), Bhopal, **24-26 Dec 2013**.
5. “*Some FRW Models Filled with Matter and Radiation in Presence of Vacuum Energy*” presented in the National Conference on Modern Analysis and Allied Areas, Banaras Hindu University (BHU), Varanasi, **23-24 Feb 2007**.
7. “*String Cosmological Model in LRS-Bianchi Type-I Space-time*” presented in Thirty First Annual Conference of Orissa Mathematical Society (OMS), Bhubaneswar, **7-8 Feb 2004**.
8. “*Non-existence of String Cosmological Model in Kink Space-time*” presented in the Second National Conference on Applicable Mathematics in Wave Mechanics and Vibrations (WMVC), Jalpaiguri, **15-16 Mar 2003**.

WORKSHOPS ATTENDED:

1. Indo-South Africa Workshop on Gravitation and Cosmology, Centre for Theoretical Physics, Jamia Millia Islamia, New Delhi, **03-04 Mar 2018**.
2. Workshop on Statistical Analysis in Cosmology, Department of Physics, CUSAT, Kochi, Kerala, **12-14 Jan 2017**.
3. Introductory Workshop on Astrophysics and Cosmology, Aliah University and IUCAA Resource Centre, Kolkata, West Bengal, **27-28 Sept 2016**.
4. General Relativity Centennial, Centre for Theoretical Physics, Jamia Millia Islamia, New Delhi, Delhi, **10-12 Dec 2015**.
5. Saha Theory workshop: Cosmology at the Interface, Theory Division, Saha Institute of

- Nuclear Physics, Kolkata, West Bengal, **28-30 Jan 2015**.
6. 2nd National Workshop on Scientific Computational Techniques (SCT-2014), Manipal University Jaipur, Rajasthan, **18-19 Dec 2014**.
 7. Gravitational Wave Physics and Astronomy Workshop (GWPAW) and Astronomy and physics with LIGO India meeting, Inter-University Centre for Astronomy and Astrophysics, Pune, Maharashtra, **17-20 Dec 2013**.
 8. Workshop on Geometry, Gravity and Cosmology, Sardar Patel University (SPU), Gujarat, **16-18 Feb 2006**.

CONFERENCE/ SYMPOSIUM

ATTENDED:

1. 2nd National Conference on Recent Trends in Mathematics with Applications, Department of Mathematics, Shri Ramswaroop Memorial University, Lucknow, **30-31 Jan 2020**.
2. National Conference on Recent Trends in Mathematics with Applications, Department of Mathematics, Shri Ramswaroop Memorial University, Lucknow, **21-22 Feb 2019**.
3. The first symposium of the BRICS Association of Gravity, Astrophysics and Cosmology, Center of Gravity and Cosmology, **Yangzhou University, Yangzhou, China, 18-20 Oct 2017**.
4. National Conference on Differential Geometry and General Relativity, Department of Mathematics, Sardar Patel University, Gujarat, **28-29 Nov 2017**.
5. 29th meeting of Indian Association for General Relativity and Gravitation, Department of Physics, IIT Guwahati, Assam, **18-20 May 2017**.
6. XXII DAE-BRNS High Energy Physics Symposium, Dept. Physics and Astrophysics, University of Delhi, **12-16 Dec 2016**.
7. International Conference on General Relativity, Sant Gadge Baba Amravati University, Amravati, Maharashtra, **25-28 Nov 2015**.
8. 3rd Rajasthan Science Congress, Manipal University Jaipur, Rajasthan, **28 Feb-2 Mar 2015**.
9. 3rd International Conference on “Innovative Approach in Applied Physical, Mathematical/Statistical, Chemical Sciences and Emerging Energy Technology for Sustainable Development”, Jawaharlal Nehru University, New Delhi, Delhi, **28 Sept 2014**.
10. International Conference on Recent Advances in Mathematics, Rastrasant Tukadoji Maharaj Nagpur University, Nagpur, Maharashtra, **20-23 Jan 2014**.
11. International Conference on Recent Advances in Mathematical Sciences and Applications, Rajiv Gandhi Proudhyogiki Vishwavidyalaya, Bhopal, Madhya Pradesh, **24-26 Dec 2013**.
12. National Conference on Modern Analysis and Allied Areas, Banaras Hindu University, Varanasi, Uttar Pradesh, **23-24 Feb 2007**.
13. Twenty Second Annual Conference of the Mathematical Society, Banaras Hindu University, Varanasi, Uttar Pradesh, **15-16 Dec 2006**.
14. Twenty First Annual Conference of the Mathematical Society, Banaras Hindu University, Varanasi, Uttar Pradesh, **23-24 Jan 2006**.
15. Thirty First Annual Conference of Orissa Mathematical Society, Bhubaneswar, Odisha, **7-8 Feb 2004**.
16. National Conference on Applicable Mathematics in Wave Mechanics and Vibrations, Jalpaiguri, West Bengal, **15-16 Mar 2003**.

PERSONAL DETAILS:

- Permanent address: At/Po- Sagara, Dist- Sambalpur, Pin-768224, Odisha, India.
- Languages Known: English, Hindi, Odiya.
- Passport no: L8188679
- Aadhar no: 630315873229
- Regularly attending Vipassana & other meditation courses and Yoga courses from past few years.
- Working on a self-financing project “**School of Cosmology & Selfology**”. The goal is to establish a unified platform for studying the outer Universe and inner Universe under one umbrella. The motivation behind is that the understanding of the physical nature of the reality is much necessary for the physical existence as well as the psychological understanding for a fruitful living. This education includes physics, biology, psychology and spirituality simultaneously.

MY RESEARCH IDENTIFIERS:

ArXiv: http://arxiv.org/a/pacif_s_1
Scopus: <https://www.scopus.com/authid/detail.uri?authorId=56463047200>
Researcher ID: <https://publons.com/researcher/2061498/shibesh-k-j-pacif/>
Orchid: <https://orcid.org/0000-0003-0951-414X>
Research gate: https://www.researchgate.net/profile/Shibesh_Pacif
Google Scholar Citation: <https://scholar.google.com/citations?user=qeyPHMQAAAAJ>

SKILLS:

- **Teaching & Learning**
Sound teaching and guidance skills at all level
Analytical, quick learning, multi-tasking and problem solving skills
- **Computational & Typesetting**
Microsoft office, Scientific Workplace, LaTeX, Mathematica, MatLab, Python

REFERENCES:

J. V. Narlikar, Professor, Emeritus
Inter-University Centre for Astronomy and Astrophysics,
Post Bag 4, Ganeshkhind,
Pune 411007, India.
02025604357
jvn@iucaa.in

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Centre for Theoretical Physics,
Jamia Millia Islamia,
New Delhi 110025, India.
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Abdussattar, Professor, Retd.

Department of Mathematics,
Institute of Science,
Banaras Hindu University,
Varanasi, Uttar Pradesh, 221005, India.
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R. G. Vishwakarma, Professor

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Universidad Autonoma de Zacatecas,
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P. K. Sahoo, Professor, Assoc.

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Birla Institute of Technology & Science-Pilani,
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Shameerpet Mandal, Hyderabad 500078,
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Date & Place:

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