


Title	Dr.	First Name	Ritika	Last Name	Nagpal	Photograph
Designation	Assistant Professor					
Address (Campus)	Department of Mathematics, Vivekananda College, University of Delhi					
(Residence)	6648, 3 <sup>rd</sup> Floor, East Rohtash Nagar, Shahdara, New Delhi- 110032					
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Educational Qualifications	B.Sc., M.Sc., NET, Ph.D.					
Degree	Institution				Year	
Ph.D.	NSUT (formerly NSIT, University of Delhi)				2019	
M.Sc.	Hansraj College, DU				2014	
B.Sc.	Vivekananda College, DU				2012	
Career Profile						
Designation				Duration		
Assistant professor (Permanent) at Vivekananda College, DU				08/01/2024 till Present		
Assistant professor (Ad-hoc) at Vivekananda College, DU				26/07/2019 to 07/01/2024		
Assistant professor (Ad-hoc) at Gargi College, DU				23/07/2019 to 22/08/2019		
Administrative Assignments:						
<ul style="list-style-type: none"><li>External Examiner in various colleges of Delhi University</li><li>Paper and syllabus setting for various Delhi University examinations</li><li>Worked in various committees of the college, viz., IQAC, NIRF, Admission Committee, ALUMNI Committee</li></ul>						
<b>Subjects Taught:</b> Complex Analysis, Research Methodology, Biomathematics, GE Math, Discrete Mathematics, CAS, Analytic Geometry and Applied Algebra, Probability and Statistics (using Excel), Mathematical Statistics, Numerical Methods & Programming (using Mathematica software), Documentation Preparation & Presentation Software, Group Theory						

## Research Guidance: NA

### Publications profile:

1. **Ritika Nagpal**, Himanshu Chaudhary, Harshita Gupta, S.K.J. Pacif, Late-time constraints on dynamical dark energy models using DESI DR2, Type Ia supernova, and CC measurements, *Journal of High Energy Astrophysics*, 47, 100396 (2025) (Impact factor: 10.2)
2. Himanshu Chaudhary, **Ritika Nagpal**, S.K.J. Pacif, G. Mustafa, Impact of Interacting Parameters on Dark Matter in an Interacting Dark Energy Model, *Astrophysical Journal Supplement Series*, 278, Issue 1, 22 (2025) (Impact factor: 8.6)
3. **Ritika Nagpal**, S.K.J. Pacif, Farruh Atamurotov, Rasmikanta Pati, Dark Sector Interactions: Probing the Hubble Parameter and the Sound Horizon, arXiv preprint: 2503.06319 [gr-qc] (2025)
4. J. K. Singh, **Ritika Nagpal**, *A model of dark matter-dark energy interaction with some cosmic consequences*, *Ind. J. Phys.*, (2023) (Accepted) DOI: 10.1007/s12648-023-03002-5 (**Impact factor: 1.778**).
5. **Ritika Nagpal**, Shibesh Kumar Jas Pacif, Abhishek Parida, Reconstructing cosmic evolution with a density parametrization *Mod. Phys. Lett. B* 37 18 (2022), ISSN (print): 0217-7323 | ISSN (online): 1793-6632 (**Impact factor: 2.006**)
6. **Ritika Nagpal**, Shibesh Kumar Jas Pacif, Cosmological aspects of  $f(R, T)$  gravity in a simple model with a parametrization of  $q$ , *Eur.Phys. J. Plus* 136 (8) 875 (2021) (**Impact factor: 3.911**)
7. J. K. Singh, **Ritika Nagpal**, FLRW cosmology with EDSFD parametrization, *Eur. Phys. J. C* 80 (4), 295 (2020) (**Impact factor: 5.172**) ISSN/ISBN 1434-6044(P) 1434-6052(O)
8. **Ritika Nagpal**, J. K. Singh, A Beesham, Hamid Shabani, Cosmological aspects of a hyperbolic solution in  $f(R, T)$  gravity, *Annals Phys.* 405, 234-255 (2019) (**Impact factor: 2.267**) ISSN/ISBN 0003-4916
9. **Ritika Nagpal**, S. K. J. Pacif, J. K. Singh, K. Bamba, A Beesham, Analysis with observational constraints in  $\Lambda$ -cosmology in  $f(R, T)$  gravity, *Eur. Phys. J. C* 78 (11) 946 (2018) (**Impact factor: 5.172**) ISSN/ISBN 1434-6044(P) 1434-6052(O)
10. J. K. Singh, Kazuharu Bamba, **Ritika Nagpal**, S. K. J. Pacif, Bouncing cosmology in  $f(R, T)$  gravity, *Phys. Rev. D* 97 123536 (2018) (**Impact factor: 4.506**) ISSN/ISBN 2470-10 2470-0029(O)
11. **Ritika Nagpal**, J.K. Singh, S. Aygun, FLRW cosmological models with quark and strange quark matters in  $f(R, T)$  gravity, *Astrophys. Space Sci.* 363 (6) (2018) (**Impact factor: 1.622**) ISSN/ISBN 0004-640X(P) 1572-946X(O)
12. J. K. Singh, **Ritika Nagpal**, S. K. J. Pacif, Statefinder diagnostic for modified Chaplygin gas cosmology in  $f(R, T)$  gravity with particle creation, *Int. J. Geom. Meth. Mod. Phys.* 15 (3), 1850049 (2017) (**Impact factor: 1.068**) ISSN/ISBN 0219-8878 (P) 1793-6977(O)

### Conference organization/Presentations (in the last three years):

- Attended a two-day Indo-South Africa workshop on “Gravitation and Cosmology”, held at Centre for Theoretical Physics, Jamia Millia Islamia, during December 3-4, 2018.
- Participated in an International Conference “International Conference on Recent Advances in Pure and Applied Mathematics” held in Department of Mathematics, Delhi

Technological University during October 23-25, 2018.

- Presented a poster in an “Indian Association for General Relativity and Gravitation (IAGRG)”, organized by Dept. of Physics, BITS-Pilani, Hyderabad Campus, during January 3-5, 2019.
- Presented a paper entitled “Study on FLRW cosmology with observational interpretation using a specific form of energy density of scalar field” in an international conference on Gravitation, Cosmology & Mathematical physics organized at the Department of Mathematics, GLA University, Mathura, during April 4-7, 2019.
- Participated in a three-week webinar entitled “Introduction to computer algebra system: Maxima” held by “Student learning centre IQAC, Hansraj College, University of Delhi, during June 27, 2020 – July 18, 2020.
- Participated in a one-week online workshop entitled “Data Manipulation and Visualization through Statistical Software R” organised by “Zakir Hussain College, University of Delhi” during July 27, 2020 – July 31, 2020
- Participated in a one-week Faculty Development Program entitled “Microsoft Tools for Creating Effective Teaching and learning environment” organised by “Vivekananda College, University of Delhi” during June 7, 2021 – June 13, 2021.
- Participated in a one-week Faculty Development Program entitled “Mathematical Analysis and its Applications” organised by “Vivekananda College, University of Delhi” during July 26, 2021 – July 31, 2021.
- Participated in a one-week online Faculty Development Program entitled “Basic IT tools, Advanced Spreadsheet Tools and Statistical Software Package with SPSS” organised by “University of Delhi and Guru Angad Dev Teaching learning centre, SGTB Khalsa College” during October 27th , 2022 – November 3rd , 2022.
- Participated in a five-day online national workshop on Mathematical Modelling and Simulation organized by the Department of Mathematics, Sri Guru Nanak Dev Khalsa College (University of Delhi), under the aegis of IQAC, held from 13th February 2024 to 17th February 2024.
- Participated in a faculty induction program at Teaching Learning Centre, Ramanujan College, University of Delhi (Accredited Grade 'A++' by NAAC, under the aegis of the Ministry of Education, Malaviya Mission Teacher Training Programme) held in Delhi from 21st February 2024 to 19th March 2024.
- Completed a refresher course – Foundation Course in Vedic Mathematics at Teaching Learning Centre, Ramanujan College, University of Delhi (Accredited Grade 'A++' by NAAC, under the aegis of the Ministry of Education, Malaviya Mission Teacher Training Programme) conducted in Delhi from 31st March 2024 to 13th April 2024.
- Attended a refresher course – NEP 2020 Orientation and Sensitization Program organized by GAD-MMTTC, Delhi from 16th April 2024 to 26th April 2024.
- Participated in a one week faculty development program on Importance of Accreditation, Outcome-Based Education (OBE) and NEP-2020, organized by the Internal Quality Assurance Cell (IQAC) in collaboration with the Department of Applied Science, Bharati Vidyapeeth's College of Engineering, held in Delhi from 27th May 2024 to 31st May 2024.
- Presented a paper titled "Dark Matter–Dark Energy Interactions: New Parametric Insights" at the MTMI International Conference on Emerging Issues in Business, Technology and Applied Sciences, held at Holiday Inn Express Airport, Dubai, UAE, in

collaboration with DBMA, University of Maryland Eastern Shore, from 20th to 22nd December 2024.

- Organising member in the two days International Conference organising by IQAC Committee and E-Cell at Vivekananda College on 12<sup>th</sup>- 13<sup>th</sup> February 2025.
- Organising member in the One-day E-Summit by IQAC Committee and E-Cell at Vivekananda College on 14<sup>th</sup> February 2025

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

#### **Awards and Distinctions:**

- Qualified NET exam (Mathematical Sciences) in December 2015, with AIR 28
- Received awards for having secured Highest Marks in Vivekanand College in B.Sc. Mathematics (1st, 2nd, 3rd year)
- Received a cash prize of Rs 10,000/- release of grant-in-aid for Meritorious Students studying in Government funded colleges during the academic year 2012-2013
- Received a cash prize of Rs 1450/- being “The Geetika Nagpal Khurana Scholarship Award” for having secured Highest Marks in B.Sc. 2nd year, for the academic year 2011-2012

#### **Other Activities**

##### **Book Authored**

Author of the book titled “Essentials of Complex Analysis” for B.Sc. (Honours) Mathematics under the National Education Policy NEP (2020), intended for undergraduate students, published by Sultan Chand & Sons.