

RESEARCH INTERESTS

Cosmology (Cosmic Microwave Background, Large Scale Structure), Radio Astronomy, Gravitational Wave Astronomy, High Performance Computing (HPC), Grid Computing, Artificial Intelligence (AI).

ADDRESSES

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Permanent

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PERSONAL INFORMATION

Date of Birth	:	June 30, 1977
Place of Birth	:	Rudraprayag (India)
Citizenship	:	Indian
Sex	:	Male
Marital Status	:	Married

EMPLOYMENT HISTORY

1. **Oct 20, 2013- Present:-** DST Young Scientist (Fast Track) Research Fellow at Inter-University Centre for Astronomy & Astrophysics (IUCAA) Pune, India.
2. **Aug 03, 2010- Oct 20, 2013:-** Post Doctoral Fellow at the Inter-University Centre for Astronomy & Astrophysics (IUCAA) Pune, India.
3. **May 07, 2008-Aug 02, 2010:-** Post Doctoral Fellow at the National Centre for Radio Astronomy & Astrophysics (NCRA-TIFR) Pune, India.
4. **August 08, 2001-May 04, 2008:-** Ph. D. Student at Harish-Chandra Research Institute (HRI) Allahabad, India.

EDUCATION

1. **Ph. D (2009)** : From Harish-Chandra Research Institute (HRI) Allahabad (affiliated to Allahabad University) under the supervision of **Prof. J. S. Bagla** [Thesis Title : *Aspects of Gravitational clustering*].
2. **B.Ed (2000)** : From H. N. B. Garhwal University, Srinagar Garhwal [Ist Div.]
3. **M.Sc. (1998)**: From H. N. B. Garhwal University, Srinagar Garhwal (Physics, Specialization in Electronics & Communication) [Ist Div. 72.5%].
4. **B.Sc. (1996)** : From H. N. B. Garhwal University, Srinagar Garhwal (main subjects Physics & Mathematics) [Ist Div., 64.7%].
5. **Intermediate (1993)**: From U. P. Board Allahabad (main subjects Physics, Chemistry & Mathematics) [Ist Div., distinction in Physics, Chemistry & Mathematics, 69.0%].
6. **High School (9991)**: From U. P. Board Allahabad (main subject Science) [IInd Div., 56.2%].

COMPETITIVE EXAMS AND AWARDS

1. A **Fast Track Research** grant [Rs. 22,10,000/-] from the **Science & Engineering Research Board (SERB)**, Government of India, SR/FTP/PS-102/2012
2. Indo-US Science and Technology Forum (IUSSTF) grant for a two month long visit of USA (Caltech).
3. **NET (December 2001 and June 2002)**: Cleared the **National Eligibility Test (NET)** for determining the eligibility for lectureship and for the award of Junior Research Fellowship (JRF) conducted by the University Grant Commission (UGC) and the Council of Scientific and Industrial Research (CSIR) of India.
4. **JEST (2001)**: Obtained 97.3 percentile score in the **Joint Entrance Screening Test (JEST)** conducted by major research institutes in India for Phd programs.
5. Post Doctoral Fellowship (May 07, 2008- August 02, 2010) at NCRA Pune.
6. Post Doctoral Fellowship (August 03, 2010-Present) at IUCAA Pune.
7. Selected for Wiley science advisor (June 2012).

COMPUTER SKILLS

1. **Platforms**: WINDOWS, LINUX (RED HAT, UBUNTU, SUSE, FEDORA).
2. **Programming** : Fortran, C, MATLAB, MATHEMATICA.
3. **Scripting** : AWK, BASH, SED, PERL.
4. **Web Design**: HTML, CSS, PHP, Javascript, MySQL.
5. **Parallel Computation**: MPI, OpenMP, pthreads, CUDA.
6. Grid Computing
7. **System Administration**: Some experience of setting up Linux clusters and managing small super-computing systems like Cray CX1TM and managing grid services like Globus and CONDOR.

RESEARCH DETAILS

Publications (Limited authorship):

1. Bagla, J. S., **Prasad, Jayanti**, Ray, Suryadeep, MNRAS (2005), **360**, 194., [astro-ph/0408429], *Gravitational collapse in an expanding background and the role of substructure I: Planar collapse*
2. Bagla, J. S. and **Prasad, Jayanti**, MNRAS (2008), **393**, 607, [astro-ph/0802.2796], *Gravitational collapse in an expanding background and the role of substructure II: Excess power at small scales and its effect of collapse of structures at larger scales.*
3. Bagla, J. S. and **Prasad, Jayanti**, MNRAS (2009), **370**, 993., [astro-ph/0601320], *Effects of the size of cosmological N-Body simulations on physical quantities – I: Mass Function*
4. Prasad, Jayanti, J. Astrophys.Astron. (2007) **28**, 117, [astro-ph/0702557], *Effects of the size of cosmological N-Body simulations on physical quantities – II: Halo Formation and Destruction rate.*
5. J.S. Bagla, **Jayanti Prasad** and Nishikanta Khandai, MNRAS (2009), **395**, 918, [astro-ph/0804.1197], *Effects of the size of cosmological N-Body simulations on physical quantities - III: Skewness.*
6. **Jayanti Prasad** and Jayaram Chengalur, Exper. Astron (2011), **33**, No.1, pp 157-17, [astro-ph.IM/1111.6415], *FLAGCAL:A flagging and calibration package for radio interferometric data.*
7. **Prasad Jayanti** and Souradeep Tarun, Physical Review D (2012) **85** 123008, [astro-ph.CO/1108.5600], *Cosmological parameter estimation using Particle Swarm Optimization (PSO).*
8. Abhik Ghosh, **Jayanti Prasad**, Somnath Bharadwaj, Sk. Saiyad Ali, Jayaram N. Chengalur, MNRAS (2012), **426**, 3295, [arXiv:1208.1617v1], *GMRT Epoch of Reionization (EOR) observations for Foregrounds of redshifted 21 cm line: Multifrequency Angular Power Spectrum $C_l(\Delta\nu)$ measurements, expected $C_l^{HI}(\Delta\nu)$ & current status of Foreground removal.*
9. N. D. R. Bhat, J. N. Chengalur, P. J. Cox, Y. Gupta, **J. Prasad**, J. Roy, M. Bailes, S. Burke-Spolaor, S. S. Kudale, W. van Straten, The Astrophysical Journal Supplement Series(2013)[**Impact Factor 16.238**], **206** 2, pp 22, [arXiv:1302.3418], *Detection of fast transients with radio interferometric arrays.*
10. Gaurav Goswami and **Jayanti Prasad**, Phys. Rev. D (2013) **88**, 023522, [arXiv:1303.4747], *Maximum Entropy deconvolution of Primordial Power Spectrum.*
11. Jayanti Prasad (2014), [arXiv:1412.3298 [astro-ph.CO]], *Revisiting Cosmological parameter estimation.*
12. Suratna Das, Gaurav Goswami, **Jayanti Prasad**, Raghavan Rangarajan (2014), [arXiv:1412.7093 [astro-ph.CO]], *Revisiting a pre-inflationary radiation era and its effect on the CMB power spectrum.*
13. Asif Iqbal, Jayanti Prasad, Tarun Souradeep, Manzoor A. Malik (2015), [arXiv:1501.02647 [astro-ph.CO]], *Joint Planck and WMAP Assessment of Low CMB Multipoles.*

Publications (With the Ligo Scientific Colloaboartion):

1. C. Affeldt et. al. (The LIGO Scientific Collaboration and the Virgo Collaboration), Class. Quantum Grav. (2014) **31** 115004, [arXiv:1401.0939 [gr-qc]], *The NINJA-2 project: Detecting and characterizing gravitational waveforms modelled using numerical binary black hole simulations.*

2. Aasi et. al. (The LIGO Scientific Collaboration and the Virgo Collaboration), *Class. Quantum Grav.* (2014) **31** 165014, [arXiv:1402.4974 [gr-qc]], *Implementation of an F-statistic all-sky search for continuous gravitational waves in Virgo VSR1 data.*
3. Aasi et. al. (The LIGO Scientific Collaboration and the Virgo Collaboration), *Phys. Rev. D* (2014) **89**, 102006, [arXiv:1403.5306 [gr-qc]], *Search for gravitational wave ringdowns from perturbed intermediate mass black holes in LIGO-Virgo data from 2005-2010.*
4. Aasi et. al. (The LIGO Scientific Collaboration and the Virgo Collaboration), *Phys. Rev. Lett* (2014) **113** 011102, [[arXiv:1403.6639 [astro-ph.HE]], *Search for gravitational waves associated with gamma-ray bursts detected by the InterPlanetary Network.*
5. Aasi et. al. (The LIGO Scientific Collaboration and the Virgo Collaboration), *Phys. Rev. D* (2014) **89** 122003, [arXiv:1404.2199 [gr-qc]], *Search for gravitational radiation from intermediate mass black hole binaries in data from the second LIGO-Virgo joint science run.*
6. Aasi et. al. (The LIGO Scientific Collaboration and the Virgo Collaboration), *Phys. Rev. D* (2014) **89**, 122004 [arXiv:1405.1053 [astro-ph.HE]], *Methods and results of a search for gravitational waves associated with gamma-ray bursts using the GEO600, LIGO, and Virgo detectors.*
7. Aasi et. al. (The LIGO Scientific Collaboration and the Virgo Collaboration), *Phys. Rev. D* (2014) **90**, 062010(2014), [arXiv:1405.7904 [gr-qc]], *First all-sky search for continuous gravitational waves from unknown sources in binary systems.*
8. Aasi et. al. (The LIGO Scientific Collaboration and the Virgo Collaboration), *Phys. Rev. Lett* (2014). **113**, 231101, [arXiv:1406.4556 [gr-qc]], *Improved Upper Limits on the Stochastic Gravitational-Wave Background from 2009-2010 LIGO and Virgo Data.*
9. Aartsen., M. G., et. al. (The IceCube Collaboration, The LIGO Scientific Collaboration, The Virgo Collaboration) (2014), *Phys. Rev. D* (2014), **90** 102002, [arXiv:1407.1042 [astro-ph.HE]], *Multimessenger Search for Sources of Gravitational Waves and High-Energy Neutrinos: Results for Initial LIGO-Virgo and IceCube.*
10. Aasi J., et. al. (The LIGO Scientific Collaboration, The Virgo Collaboration) (2014), [arXiv:1410.8310 [astro-ph.IM]], *Narrow-band search of continuous gravitational-wave signals from Crab and Vela pulsars in Virgo VSR4 data.*
11. Aasi J., et. al. (The LIGO Scientific Collaboration, The Virgo Collaboration) (2014), [arXiv:1412.0605 [gr-qc]], *A directed search for gravitational waves from Scorpius X-1 with initial LIGO.*
12. Aasi J., et. al. (The LIGO Scientific Collaboration, The Virgo Collaboration) (2014), [arXiv:1412.5942 [astro-ph.HE]], *Searches for continuous gravitational waves from nine young supernova remnants.*

Publications (In conference Proceedings):

1. Jayanti Prasad, *Bulletin of the Astronomical Society of India* (2005), Vol. 33, p. 396-396 (Proceedings ICGC 2004), *Gravitational collapse in an expanding background and the effects of small scales perturbations on large scales.*
2. Abhik Ghosh, **Jayanti Prasad**, Somnath Bhardaj, Sk. Said Ali and Jayaram Chengalur, *Journal of Physics: Conference Series* 484 (2014) 012032 (Proceedings of ICGC 2011, GOA), [winner poster],

Characterizing the diffuse foreground for red-shifted 21 cm HI signal : GMRT 150 MHz observations

3. **Jayanti Prasad** and Tarun Souradeep, Journal of Physics: Conference Series 484 (2014) 012047 (Proceedings of ICGC 2011, GOA), *Cosmological Parameter Estimation using Particle Swarm Optimization*.

(ii) Schools/Conferences/Workshops attended:

1. **2002, June:** SERC School on Astrophysics, Indian Institute of Technology Kharagpur, India.
2. **2003, Jan:** Eighth discussion meeting on frontier areas in physics, Raman Research Institute & Center for Learning Bangalore, India.
3. **2003, June 02-22:** School on Radio Interferometry and Aperture Synthesis, National Center for Radio Astronomy (NCRA), Pune, India.
4. **2003, Dec 16-23:** An advanced school on the physics of galaxy formation, Harish-Chandra Research Institute (HRI) Allahabad, India.
5. **2004, Jan 05-10:** International Conference on Gravitation and cosmology (ICGC), Department of Physics, Cochin University of Science and Technology, Kochi, India.
6. **2004, Dec 07-10:** XXIII Conference of the IAGRG, Department of mathematics, University of Rajasthan, Jaipur, India.
7. **2005, Jan 07-14:** School on Parallel Computing and Applications, Institute of Mathematical Sciences, Chennai, India.
8. **2005, Feb 21-24:** XXIII meeting of Astronomical Society of India, Aryabhata Research Institute of Observational Sciences (ARIES), Nainital, India.
9. **2005, Sept 05-17:** Summer School NOVICOSMO 2005, Novigrad, Croatia.
10. **2006, July 10-28:** Summer School in Cosmology and Astroparticle Physics, The Abdus Salam International Centre for Theoretical Physics, Trieste, Italy.
11. **2007, Dec 27- 2008, Jan 03:** Workshop on study of emission from hot diffuse gas with ASTROSAT, Christ College Bangalore, India.
12. **2007, May:** Course on Linux Systems, Network and Advanced Administration, Conducted by Linux Learning Center Bangalore at Harish-Chandra Research Institute (HRI) Allahabad.
13. **2007, Nov:** Indian Conference on Cosmology and Galaxy Formation (ICCGF-07), Harish-Chandra Research Institute (HRI) Allahabad, India.
14. **2007, Dec:** International Conference on Gravitation and cosmology(ICGC 2007), Inter-University Centre for Astronomy & Astrophysics (IUCAA) Pune, India.
15. **2008, May:** Radio Astronomy School, National Centre for Radio Astronomy & Astrophysics (NCRA-TIFR) Pune, India.
16. **2008, July-August:** Conference and Workshops on Cosmology with the CMB and LSS, Inter-University Centre for Astronomy & Astrophysics (IUCAA) Pune, India.
17. **2008, Sept:** Performance Enhancement on Emerging Parallel Processing Platforms (PEEP-2008), Inter-University Centre for Astronomy & Astrophysics (IUCAA) Pune, India.
18. **2008, Dec:** The Low-Frequency Radio Universe, National Centre for Radio Astronomy & Astrophysics (NCRA-TIFR) Pune, India.
19. **2009, Oct:** High-Performance computing in observational Astronomy: Requirements and challenges, Inter-University Centre for Astronomy & Astrophysics (IUCAA) Pune, India.

20. **2009, Dec:** Homi Bhabha Centenary Symposium, Tata Institute of Fundamental Research Mumbai, India.
21. **2010, Dec 14-18:** Primordial Features and Non-Gaussianities (PFNG), Harish-Chandra Research Institute (HRI) Allahabad, India.
22. **2011, Aug 10-12:** Confronting particle-cosmology with Planck and LHC, Inter-University Centre for Astronomy & Astrophysics (IUCAA) Pune, India.
23. **2011, Oct 17-21:** Heterogeneous Computing - Many Core/ Multi-GPU - Performance of Algorithms, Application Kernels, CMSD, University of Hyderabad, Hyderabad, India.
24. **2011, Nov 05-07:** Indian Conference on Cosmology and Galaxy Formation (ICCGF-2011), IISER, Mohali, Chandigarh, India.
25. **2011, Dec 1-11:** ICTS School on Cosmology and Gravitational Waves, Inter-University Centre for Astronomy & Astrophysics (IUCAA) Pune, India.
26. **2011, Dec 14-19:** An International Conference on Gravitation and Cosmology, Goa, India.
27. **2012, Dec 17-21:** IEEE International Conference on High Performance Computing (HiPC), Hotel Le Meridian, Pune, India
28. **2013, Dec 17-20:** Gravitational Wave Physics and Astronomy Workshop (GWPAW), Inter-University Centre for Astronomy & Astrophysics (IUCAA) Pune, India.

(iii) Talks & Presentation:

1. **2004, Jan :** Poster presentation in ICGC 2004.
2. **2004, Dec :** Short talk in IAGRG 2004.
3. **2005, Feb :** Poster presentation in XXIII ASI meeting.
4. **2006, Feb :** Theoretical Physics Circuit Seminar, Tata Institute of fundamental research, Mumbai, India.
5. **2006, Feb :** Theoretical Physics Circuit Seminar Inter-University Centre for Astronomy & Astrophysics (IUCAA) Pune, India.
6. **2006, Feb :** Theoretical Physics Circuit Seminar, Raman Research Institute, Bangalore, India.
7. **2006, Feb :** Theoretical Physics Circuit Seminar, Dept. of Physics & Astrophysics University of Delhi, New Delhi, India.
8. **2006, July:** A short presentation in the Summer School in Cosmology and Astroparticle Physics, ICTP, Italy.
9. **2007, Nov:** Short Presentation in the ICCGF-07, Harish-Chandra Research Institute (HRI) Allahabad, India.
10. **2007, Dec:** Short Presentation in the ICGC 2007, Inter-University Centre for Astronomy & Astrophysics (IUCAA) Pune, India.
11. **2008, Feb:** Astronomy and Instrumentation seminar, National Centre for Radio Astronomy & Astrophysics (NCRA-TIFR) Pune, India.

12. **2010, Jan:** Invited talk in a state level seminar on Astrophysics, cosmology and Gravitation, C. K. Thakur College, Panvel, Maharashtra, India.
13. **2011, Nov 3:** Theoretical Physics Circuit Seminar, Physics Department, University of Punjab Chandigarh, India.
14. **2011, Nov 5:** Talk in Indian Conference on Cosmology and Galaxy formation (ICCGF-2011), Indian Institute of Science Education and Research, Mohali, India.
15. **2011, Dec :** Poster presentation in International Conference Gravitation and Cosmology (ICGC-2011), Goa, India.
16. **2013, March 07-09 :** Short talk in IAGRG 2013 at H. N. B. Garhwal University, Srinagar Garhwal , India.
17. **2013, Nov 07-09:** Gave a four lecture course on Cosmic Microwave Background (CMB) in the Autumn School on Cosmology in BITS Pilani, Pilani, India.

(iv) International Visits:

1. **2012, Sept 15 - Nov 15:** California Institute of Technology (Caltech), USA.