

Curriculum-vitae

Date: 19th April 2023

Personal Details:

Name : **Dr. Sanjeev Kumar**
Date of Birth : 2nd February, 1987
Fathers' Name: Jai Singh
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Home Address: Village and Post Office - Kanonda,
Tehsil - Bahadurgarh, District - Jhajjar,
Haryana, Pincode – 124507

Education:

Exam passed	University/Board	Year of Passing	Percentage of Marks	Division	Subjects
Matric	Board of School Education Haryana	2003	71.83	First	Hindi, English, Math, Science, Social Science, Physical Education
Higher Secondary	Board of School Education Haryana	2005	64.20	First	Hindi, English, Physics, Chemistry, Biology, Mathematics
B.Sc.	Maharshi Dayanand University, Rohtak	2008	63.31	First	Physics, Chemistry, Mathematics
M.Sc.	University of Delhi	2010	71.90	First	Physics

NET : **CSIR-UGC JRF** Exam Passed in **2009** and **2010**

Ph.D. : Subject : Theoretical High energy Physics
Thesis Title : **“Study of Boson Stars”**
Date of Registration : 25th October 2010
Date of Submission : 15th September 2015
Date of Award : 20th September 2016
Name of University : University of Delhi

Supervisors: Prof. Dr. Daya Shankar Kulshreshtha (DU)
Dr. Usha Kulshreshtha (KMC DU)

Work Experience:

1. Assistant Professor, Department of Physics, Hansraj College, University of Delhi.
20th December 2022 - till date
Subjects Taught: UG courses: Mathematical Physics - I, Electrical circuit analysis.
2. Assistant Professor, Department of Physics, Pt. NRS Govt. College, Rohtak.
19th July, 2018 - 19th December 2022,
Subjects Taught: PG courses - Quantum Mechanics - I, Statistical Mechanics, General
Physics Practicals, Electronics Practicals
UG courses: Mechanics, Mathematical Physics
3. CSIR Research Associate, Department of Physics and Astrophysics, University of
Delhi. April, 2017 - July 2018.

Research Interest:

1. Theoretical high energy physics
2. General Relativity

List of Publication:

Research Papers:

1. [Phase Diagrams of Charged Compact Boson Stars](#)
Sanjeev Kumar, Usha Kulshreshtha, Daya Shankar Kulshreshtha, Jutta Kunz
Published in *Eur.Phys.J.C* 79 (2019) 6, 496
DOI: 10.1140/epjc/s10052-019-7006-y
e-Print: arXiv:1906.00520 [hep-th]
2. [Some new results on charged compact boson stars](#)
Sanjeev Kumar, Usha Kulshreshtha, Daya Shankar Kulshreshtha, Sarah Kahlen, Jutta
Kunz
Published in *Phys.Lett. B.* 772 (2017) 615-620
DOI: 10.1016/j.physletb.2017.07.041
e-Print: arXiv:1709.09445 [hep-th]
3. [New Results on Charged Compact Boson Stars.](#)
Sanjeev Kumar, Usha Kulshreshtha, Daya Shankar Kulshreshtha

Published in Phys.Rev. D93 (2016) no.10, 101501

DOI: 10.1103/PhysRevD.93.101501

e-Print: arXiv:1605.02925 [hep-th]

4. Boson stars in a theory of complex scalar field coupled to gravity.

Sanjeev Kumar, Usha Kulshreshtha, Daya Shankar Kulshreshtha

Published in Gen.Rel.Grav. 47 (2015) no.7, 76

DOI: 10.1007/s10714-015-1918-0

e-Print: arXiv:1605.07015 [hep-th]

5. Boson stars in a theory of complex scalar fields coupled to the U(1) gauge field and gravity.

Sanjeev Kumar, Usha Kulshreshtha, Daya Shankar Kulshreshtha

Published in Class.Quant.Grav. 31 (2014) 167001

DOI: 10.1088/0264-9381/31/16/167001,

e-Print: arXiv:1605.07210 [hep-th]

6. Charged Compact Boson Stars and Shells in the Presence of a Cosmological Constant.

Sanjeev Kumar, Usha Kulshreshtha, Daya Shankar Kulshreshtha

Published in Phys.Rev. D94 (2016) no.12, 125023

DOI: 10.1103/PhysRevD.94.125023,

e-Print: arXiv:1709.09449 [hep-th]

Conference Proceedings:

1. Boson Stars and QCD boson Stars

Usha Kulshreshtha, Sanjeev Kumar, Daya Shankar Kulshreshtha, Jutta Kunz

Published in PoS LC2019 (2020) 054 e-Print: [2001.03745](https://arxiv.org/abs/2001.03745) [hep-th]

DOI: <https://doi.org/10.22323/1.374.0054>

2. Charged Compact Boson Stars in a Theory of Massless Scalar Field
Sanjeev Kumar

Published in: Few Body syst. 59 (2018) 3, 35

DOI: <https://doi.org/10.1007/s00601-018-1360-4>

3. Boson Stars and Boson Shells

Sanjeev Kumar, Usha Kulshreshtha, Daya Shankar Kulshreshtha

Published in: Few Body syst. 59 (2018) 2, 6

DOI: <https://doi.org/10.1007/s00601-018-1328-4>

- **PRD paper promoted through APS's Physics Central Social Media efforts:**

1. New Study Shows Rich Physics in Models of Hypothetical Boson Stars

Physics Buzz blog Written By: Kendra Redmond On my Phys.Rev.D93 (2016)

2. Research Revisited: Knotted Hearts, Boson Stars, and Magnetic Particles

Physics Buzz blog Written By: Kendra Redmond On my Phys.Rev.D94 (2016)

Schools and Conferences Attended:

1. Presented a poster in International Conference on Light Cone Physics: Frontiers in Light front hadronic physics: theory and experiment held at University of Mumbai in September, 2017.
2. Participated in International Conference on Light cone Physics: Hadronic and Particle Physics 2012 held at University of Delhi (DU) in December 2012.
3. Participated in International Conference on New Trends in Field Theory, Held at Banaras Hindu University, Varanasi in November 2012.
4. Participated in Preliminary Serc School on Theoretical High Energy Physics Held at North Bengal University (NBU) in September-October 2012.
5. Participated In National String Meeting Held at Institute of Life Long Learning, University of Delhi in December 2011.
6. Participated in International Conference on New Trends in Field Theory, Held at Banaras Hindu University, Varanasi in February 2011.

References:

1. Prof. Dr. Daya Shankar Kulshreshtha (Thesis Supervisor)
Retired Professor of Physics, Department of Physics and Astrophysics, University of Delhi -110007
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2. Prof. Usha Kulshreshtha (Thesis Supervisor)
Professor of Physics, Department of Physics, Kirori Mal College, University of Delhi
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