



University Faculty Details Page on DU Web-site

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Title	Prof.	First Name	Shougaija m	Last Name	Somorendro Singh	Photograph
Designation	Professor					
Department	Physics and Astrophysics					
Address (Campus)	North Campus, University of Delhi, Delhi-110007					
(Residence)	D-IV/3, Maurice Nagar, University of Delhi, Delhi-110007					
Phone No (Campus)	91-11-27667793					
(Residence) optional	NIL					
Mobile	09354235226					
Fax	011-27667061					
Email	sssingh@physics.du.ac.in ; somoren71@gmail.com					
Web-Page	Nil					
Education						
Subject	Institution	Year	Details			
Ph.D	University of Delhi	2003	Thesis topic: High Energy Heavy-Ion Collisions and Quark-Gluon Plasma			
M.Sc Physics	University of Delhi	1995	Subjects: GTR AND COSMOLOGY and QFT			
Career Profile						
Organisation / Institution	Designation	Duration	Role			
Hindu College, DU	Lecturer	1999 -2000	Teaching Graduation			
Deen Dayal Upadhaya College, DU, Depart. Of Physics and Astrophysics, University of Delhi	Lecturer Assistant Professor	2000-2002 2002-2013	Teaching Graduation Teaching post-graduation & Research			
Department of Physics and Astrophysics, University of Delhi	Associate Professor	2013-2016	Teaching Post-graduation & Research			
Department of Physics and Astrophysics, University of Delhi	Professor	2016 Onwards	Teaching post-graduation & Research			
Research Interests / Specialization						
High Energy Physics and Quark-Gluon Plasma, QCD Phase Structure, Dilepton/photon production in QGP Compact Star/Boson star						
Teaching Experience (Subjects/Courses Taught)						
Teaching From 1999 to 2002: Subs Taught in Undergraduate level: Mechanics, Electricity & Magnetism, Communication Solid State Physics Mathematical Physics Phys. Lab 1 (B.Sc (Hon))						

Phys Lab II(B. Sc (General))
Post Graduation : Subjects Taught (From 2002)
Classical Mechanics,
Quantum Mechanics -I
Quantum Mechanics-II,
Statistical Mechanics,
Electromagnetic theory
Radiation Theory
Computer Labs (M.Sc Physics III Sem and M. Tech. Nano)
Wave and optics M. Sc I and II Sem
Nuclear Lab (I and II Sem)

Honors & Awards

CSIR-NET JRF-1995-1997 and
SRF-1997-2000

PhD Awarded under Supervision:

Dr. Ranju Ranjan as Co-supervisor-Awarded -2009
Dr. Yogesh Kumar Awarded-2013
Dr. Dharmender Singh Gosain Awarded-2013
Mr. Hiyang Ramo Chothe as Co-supervisor-Thesis Submitted in 2020
Ms. Bharti Jarwal -Thesis submitted 25 March-2021
Mr. Praduman Kr Sethy- Thesis to be submitted
Ms. Anju Dahiya- Thesis to be submitted by 2022 March
Mr. Narayan Yadav Recently Join 2021

Departmental Committees:

Department Research Committee
Department Executive Council
Department Course Committee
Nodal Officer North East students
Co-coordinator Exam (B. Sc(h)) 2017-2019

Research Publications:

A simple model approach to dilepton production rate in relativistic heavy ion collisions
Yogesh Kumar, P. K. Sethy, **S. Somorendro Singh**
Phys. El. Part. At. Nuc. Theo. 18, 160 (2021)

EOS of PNJL model under the influence of thermal mass and magnetic field.
A. Dahiya, **S. Somorendro Singh**
Pramana J Phys. 94 120 (2020). (IF-1.68)

Quark gluon plasma (QGP) evolution under loop corrections
K. K. Gupta, A.K. Jha, **S. Somorendro Singh**
Int J Sci. Res App. Phys. 8 13 (2020) (IF- 1.320)

Photon Emission as a Promising Probe for Quark-Gluon-Plasma in Heavy-Ion Collision.
P. Sethy, Y. Kumar, **S. Somorendro Singh**

Int J. Sci. Res. App. Phys. 8 22 (2020) (IF- 1.320)

Dilepton production rate calculation using magnetized effective quark mass in heavy-ion collision.

P. Sethy, Y. Kumar, **S. Somorendro Singh**

Int. J Mod. Phys. A 35 2050115 (2020) (IF- 1.090)

Effect of chemical potential on rotation of boson star.

Bh. Jarwal, **S. Somorendro Singh**

Indn. J Phys. 94 (9) (2020) (IF- 1.09)

Effect of cosmological constant on amplitude variation of boson star.

Bh. Jarwal, **S. Somorendro Singh**

Int J Sci. Res. App. Phys. 8 26 (2020) (IF- 1.320)

Effect of magnetic field on dilepton production rate in RHIC

P. Sethy, Y. Kumar, **S. Somorendro Singh**

J Sci. Res, 12 (2) 215 (2020) (IF-)

Effect of dense plasma environment on the spectroscopic properties of He like Ca^{19} ion.

D. Dawra, M. Dimri, A. K. Singh, A. K. S. Jha, **S. Somorendro Singh**

J Atom. Mol. Cond. And Nano Phys. 6 104 (2019) (IF-)

Equation of state of a PNJL model with chemically equilibrium QGP.

A. Dahiya, **S. Somorendro Singh**

Indn. J Pure and App. Phys. 57 664 (2019) (IF- 1.09)

Effect of two loop correction in the formation of QGP droplet

S. Somorendro Singh, G. Saxena

Pramana J Phys. 92 (2019) (IF- 1.1)

Structural properties and decay modes of $Z=122$, 120 and 118 superheavy nuclei

G. Saxena, M. Kumawat, **S. Somorendro Singh**, M Aggarwal

Int. J Mod Phys. E 28 1950008 (2019) (IF- 1.420)

Speed of sound in a QGP with one loop correction in mean field potential.

S. Somorendro Singh, R. Ramanathan

Indn J Phys. 92 (2) 245 (2018). (IF- 1.09)

Quark number density and susceptibility calculation under one loop correction in mean field potential.

S. Somorendro Singh, G. Saxena

Pramana J Phys. 88 (6) 85 (2017). (IF- 1.1)

Collision strength and effective collision strength for BaXL VII

M. Mohan, A. Goyal, I. Khatri, **S. Somorendro Singh**, A. K. Singh

Can. J. Phys. 95 173 (2017). (IF- 1.02)

Oscillation of boson star in newtonian approximation

B. Jarwal, **S. Somorendro Singh**

Mod. Phys. Lett. A 32 1750037 (2017). (IF-1.32)

Collision strength and effective collision strength for Br XXVII.

A.Goyal, R. Sharma, I. Khatri, A. K. Singh, **S. Somorendro Singh**, M. Mohan

Can J Phys. 95 (11) (2017). (IF- 1.02)

Implications occupancy of $2s_{1/2}$ state in s d-shell within RMF+BCS approach.

G. Saxena, M. Kumawat, M. Kaushik, U. K. Singh, S.K. Jha, **S. Somorendro Singh**

Int. J Mod. Phys. E 26 1750072 (2017). (IF- 1.420)

A study on Quark Gluon Plasma equation of state using thermal quark mass.

Y. Kumar, **S. Somorendro Singh**

EPJ Conf. 137 13008 (2017) (IF-0.35)

Dilepton production as a useful probe of QGP temperature dependent chemical potential quark mass.

Yogesh Kumar and **S. Somorendro Singh**

Int. J. Mod. Phys. E, 25 (2016) 1650049 (IF-1.036).

Direct photon production at finite chemical potential from quark-gluon plasma

S. Somorendro Singh, Y. Kumar

Int. J. Mod. Phys. A 30 (2015) 1550020 (IF- 1.404).

Modified surface tension of a QGP-droplet under one loop correction in peshier potential

S. Somorendro Singh, A. K Jha and K K Gupta

Proc. Ind. Nat. Sci Acad. 81 2015, 174 (IF - 0.27)

Quark-gluon plasma fireball evolution with one loop correction in the mean field potential

S. Somorendro Singh, R. Ramanathan,

Prog. Theo. Expt. Phys 2014, 103D02 (IF- 1.007)

Dilepton emission from heavy-ion collision

S. Somorendro Singh, Y. Kumar

POS, CPOD2014, 071, 2014

Free energy and direct photon emission at finite chemical potential

S. Somorendro Singh, Y. Kumar

J. Phys. Conf. Series, 535 (2014) 012002 (IF-0.54)

Photon production in high energy nuclear collision of Quark-Gluon Plasma

S. Somorendro Singh, Y. Kumar

Int. J. Mod. Phys A, 29 (2014) 1450110. (IF-1.872)

Restudy of surface tension of QGP with one-loop correction in the mean field potential

S. Somorendro Singh, K. K. Gupta, A. K. Jha

Int J.Mod. Phys A, 29 (2014) 14500097 (IF-1.872)

Equation of state of Quark-Gluon Plasma using a simple statistical model

D. S. Gosain, **S. Somorendro Singh**

Int. J. Theo. Phys. 53, (2014), 2688 (IF-1.103)

Dilepton production in thermal dependent baryonic quark-gluon plasma

S. Somorendro Singh, Y. Kumar

Can. J. Phys. 92, (2014), 31-35. (IF-0.964)

RMF+BCS approach for drip-line isotopes of Si.

G. Sexana, D. Singh, M. Kuasihik, **S Somorendro Singh**,

Can. J. Phys. 92, (2014), 253-258. (IF-0.964)

Direct photon emission from chemically non-equilibrated QGP

Y. Kumar and **S. Somorendro Singh**

POS, DIS2014, 171 (2014)

Free energy evolution and photon radiation from QGP

Yogesh Kumar, **S. Somorendro Singh**

ISRN H. E. Phys. Vol. 2013, ID 156747, (2013)

Dilepton emission at temperature dependent baryonic quark gluon plasma

S. Somorendro Singh, Y. Kumar

J Mod. Phys. 4, 582 2013

Degenerate neutrino mass model revisited

N. N. Singh C. Duarah, H. Z. Devi, A. Borah, **S. Somorendro Singh**

Eur. Intl. J. Sci and Tech, 2, 81-90 (2013)

Dilepton production in finite baryonic quark-gluon plasma.

Yogesh Kumar, **S. Somorendro Singh**

Can. J. Phys. 90, 955-961 (2012).

Nucleation rate of the quark-gluon plasma droplet at finite quark chemical potential

D. Gosain, **S. Somorendro Singh** A. K Jha

Pram. J. Phys. 78, 719-728, (2012)

Effect of finite chemical potential on QGP-Hadrons phase transition in a statistical model

R. Ramanathan, A.K. Jha, K. K. Gupta, **S. Somorendro Singh**

Ind. J. Phys. 85 885-889. (2011)

Effect of curvature on a statistical model of quark gluon plasma fireball in the hadronic medium

S. Somorendro Singh, D S Gosain, Y. Kumar and A. K. Jha

Pramana J Phys. 74 27-37, (2010)

The interfacial surfacetension of a quark gluon plasma fireball in a hadronic medium.

R. Ramanathan, K. K. Gupta, Agam K Jha, **S. Somorendro Singh**

Pramana J Phys. 68, 757-768, 2007

Publications in Proceedings:

1 A density of states for QGP fireball formation in heavy-ion collision incorporating hydrodynamical feature in the model Springer Proceeding in Physics 203,313,2018

A. K Jha, R. Ramanathan, K. K Gupta and S. Somorendro Singh

2 Diphoton emission from equilibrium quark-gluon plasma Springer Proceeding in Physics 203,435,2018

S. Somorendro Singh

3 Rotating boson star under weak gravity potential Springer Proceeding in Physics 203,789,2018

Bh. Jarwal, S. Somorendro Singh

4 Curvature effect on QGP equation of state Springer Proceeding in Physics 203,867,2018

Y. Kumar S. Somorendro Singh

5 Boson star under cornell potential

Proced. Of DAE Sym Nucl. Phys. 62 2017, 846

Bh. Jarwal S. Somorendro Singh

6 Quark-hadron phase transition at high chemical potential in RHIC Proc of DAE-BRNS Sump on Nuclear Phys., (2016)

Y. Kumar, S. Somorendro Singh

7 QGP fireball creation in two loop correction in mean field potential Proc of DAE-BRNS Sump on Nuclear Phys., (2016)

S. Somorendro Singh

8 Photon emission from a quark-gluon plasma Proc of DAE-BRNS Sump on Nuclear Phys., (2016)

Y. Kumar S. Somorendro Singh

9 Quark-hadron phase transition at high chemical potential in relativistic heavy-ion collision Proc. of DAE-BRNS Sump on Nuclear Physics (2016)

Y. Kumar, S. Somorendro Singh

10 Susceptibility calculation under one loop correction in the mean field potential Proc. On Natn. Conf. on CICAHEP, 2015, PS3, (1-6). www.du.ac.in Page 6

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11 QGP-Hadron phase structure in a statistical model using Cornell, Richardson and Peshier potential Proc. Of DAE-BRNS Sump. On Nucl. Phys., (2015) 60.

A. K Jha, R. Ramanathan, K. K Gupta, S. Somorendro Singh

12 Velocity of sound in a quark- gluon plasma with one loop correction in mean field potential Proceeding of DAE Symp. Nucl. Phys. (2014) 59.

A. K Jha, S. somorendro Singh

13 Phenomenological study of QGP fireball thermodynamics

Proc of DAE-BRNS Nuclear Phys., (2013) 53.

R. Ramanathan, A. K Jha, S. Somorendro Singh

In Indexed/ Peer Reviewed Journals			
<u>Year of Publication</u>	<u>Title</u>	<u>Journal</u>	<u>Co-Author</u>
	NIL	NIL	NIL
<u>Articles</u>			
Total Publication Profile optional			
<u>Books/Book Chapter</u>			
Chapter 12. "Dilepton emission at temperature dependent baryonic quark-gluon plasma" New Insights into Physiscal Science Quatum Mechanics by Mathew nad Venkateshwar (last chapter reviewed)			
<u>In Indexed/ Peer Reviewed Journals</u>			
Reviewed Articles: 3 articles In Ind. J Physics 1 article in Can J Physics			
<u>Articles</u>			
<u>Invited Conference Presentations</u>			
<ol style="list-style-type: none"> 1. Session Chair,CAMNP-2019, 18-20, DTU, Delhi, India 2. Intn. Conf. Phys. Soc. Tech 2019, 17-19 Jan. 2019, DU, Delhi, India 3. Indian Sc. Congress 2018, 16-20 March 2018, Canchipur MU, Imphal 4. Nuclear Symmetry Energy2017, 4-7 Sept, 2017 Ganil Caen, France 5. Asia Triangle Heavy-Ion Conference, 15-19 Feb. 2016, New Delhi 6. DAE BRNS HEP symposium 12-16, 2016, DU Delhi, India 7. CIHEP2015, Dibrugarh University, 2-5 Nov. 2015, Assam, India 8. Winter Workshop on Nuclear Dynamics 2014, Houston, Texas, USA 9. Intn. Conf.Nucleus-Nucleus collision 2012, San Antonio,Texas,USA 10. Refresher Course, DU, 2009 			

Public Service / University Service / Consulting Activity
University Administrative Job: Dy. Dean, Dean Students Welfare 2018-2020 Resident Tutor, Gwyer Hall, 2010-2015 Member of Selection Committee (Teaching and Non Teaching) at University Colleges Member of Research Board Member of Admission Grievance Committee (Undergraduate) 2010-2016, 2019-2020
Projects (Major Grants / Collaborations)
University Provided Minor Projects: 2021 (Deconfinement and confinement phase transition) 2009-2016 (Deconfinement and confinement phase transition)
Other Details



(Signature of Faculty Member)

(Signature & Stamp
of Head of the Department)