




**DEPARTMENT OF PHYSICS**  
**DYAL SINGH COLLEGE, UNIVERSITY OF DELHI**  
**FACULTY DETAIL**



Title	Dr.	First Name	Naveen	Last Name	Gaur	
Designation		Associate Professor				
Address		Department of Physics, Dyal Singh College (University of Delhi), Lodhi Road, New Delhi - 110003				
Phone No	Office					
Residence	Mobile					
Email	<a href="mailto:naveengaur@dsc.du.ac.in">naveengaur@dsc.du.ac.in</a>					
Web-Page	<a href="https://gaurnaveen.wordpress.com">https://gaurnaveen.wordpress.com</a>					
<b>Educational Qualifications</b>						
Degree	Institution			Year		
B.Sc. (H) Physics	Hansraj College (University of Delhi)			1992		
M.Sc. Physics	Hansraj College (University of Delhi)			1994		
Ph.D. (Theoretical Physics)	University of Delhi			2001		
Foundation Level B.S. Data Science and Programing	IIT Madras			2021		
<b>Career Profile</b>						
<p>1) JSPS (Japan Society for Promotion of Sciences) Fellow at High Energy Accelerator Research Organization (KEK), Tsukuba Japan, 2006-2008</p> <p>2) Visiting Associate, IUCAA, Pune, India (2008-2011)</p> <p>3) Associate Collaborator, RECAP, HRI, Allahabad (2010-13)</p> <p>4) Short term Visiting Faculty at Korea Institute of Advanced Sciences (KIAS) (2003), Seoul, S. Korea, Yukawa Institute of Theoretical Physics (YITP), Kyoto Japan (2005), KEK, Tsukuba, Japan (2005, 2008), IPNL Lyon, France (2010, 2019), National Central University, Jhongli, Taiwan (2009, 2011), MITP, Mainz, Germany (2019).</p>						
<b>Administrative Assignments (From 1<sup>st</sup> July 2017 onwards)</b>						
<p>1) Member, Academic Council (2021-23) University of Delhi</p> <p>2) Member, DU Music &amp; Arts Admission Committee (2022-23)</p> <p>3) Member, Academic Council (2019-21) University of Delhi</p> <p>4) Member, Staff Council committees (2019-20): Special Category Admissions, Canteen and Parking Committee, New Projects Committee (Representative in GB committee), Savitri Bai Phule Study Circle.</p> <p>5) Staff Council Committees (2018-19): Finance (Convener), New Projects Committee (convener)</p>						
<b>Areas of Interest / Specialization</b>						
Theoretical High Energy Physics (Collider Physics, Flavour Physics), Numerical Techniques.						
<b>Subjects Taught</b>						
(in last 3 years)						
Mathematical Physics, C++ and Python Programming.						
<b>Research Guidance</b>						
1. Summer project (June-July 2019) : Shobhit Ranjan (Delhi Technological University) "Motion of Charged Particle in Electric and Magnetic Field"						

2. Summer project (June-July 2019) : Arpit Singh, Medha Bhindwar, Rehan (Dyal Singh College) "Measurement of Temperature and Humidity and study its variation by using Arduino UNO"
3. Summer project (June-July 2019) : Arpit Singh, Medha Bhindwar, Rehan (Dyal Singh College) "Measurement of Acceleration due to gravity by free fall using Arduino UNO"
4. Masters Summer project (2017) : Sandhya Kumari, Kunjan Yadav, Priya Yadav (Banasthali Vidyapeeth) "Numerical Solutions of Schrodinger Equation"

#### Publications Profile (From 1<sup>st</sup> July 2017 onwards)

1. The LHC potential of Vector-like quark doublets" (with G. Cacciapaglia, A. Deandrea, D. Harada, L. Panizzi, Y. Okada), *JHEP*1811 (2018) 055, [arXiv:1806.01024 \[hep-ph\]](https://arxiv.org/abs/1806.01024).
2. "Composite Higgs revealed in Higgs pair photo-production at future colliders" (with A. Bharucha, G.Cacciapaglia, A. Deandrea, D. Harada, N. Mahmoudi, K. Sridhar), CERN-TH-2020-212, KEK-TH-2285, RBI-ThPhys-20-49, TIFR/TH-20-50, *JHEP* 09 (2021) 069, [arXiv:2012.09497 \[hep-ph\]](https://arxiv.org/abs/2012.09497)
3. "Di-Higgs production in Composite Models" (with A. Bharucha, G.Cacciapaglia, A. Deandrea, D. Harada, N. Mahmoudi, K. Sridhar), CERN-TH-2021-080, RBI-ThPhys-2021-23, LCWS2021 [arXiv:2105.11030 \[hep-ph\]](https://arxiv.org/abs/2105.11030)
4. International Linear Collider : Report to snowmass 2021, (2022 Snomass Summer Study) e-Print: [2203.07622](https://arxiv.org/abs/2203.07622) [physics.acc-ph]

#### Conference Organization/ Presentations (From 1<sup>st</sup> July 2017 onwards)

1. "Vector like quark multiplets", *From Strings to LHC – IV, Chalasa, West Bengal, 05-11 March 2017. Organized by TIFR,*
2. "Vector like Quark Multiplets" Fundamental Composite Dynamics: Opportunities for future Colliders and Cosmology , Mainz Institute of Theoretical Physics (MITP), Mainz, Germany 26 August – 06 September 2019
3. "Di-Higgs production at Photon Colliders in composite models", LIO International conference on Composite connections of Higgs, Dark Matter and Neutrinos, IP2I – Universit´e Lyon 1, Lyon, France, 21-25 September 2020.

Attended following conferences/workshops:

1. "From Strings to LHC – IV", Chalasa, West Bengal, 05-11 March Organized by TIFR, Mumbai.
2. "Fundamental Composite Dynamics: Opportunities for future Colliders and Cosmology" , Mainz Institute of Theoretical Physics (MITP), Mainz, Germany 26 August – 06 September, 2019
3. "LIO International conference on Composite connections of Higgs, Dark Matter and Neutrinos", IP2I – Universit´e Lyon 1, Lyon, France, 21-25 September 2020
4. 3<sup>rd</sup> IBSE International Symposium on Clinical Genomics to System Medicine: Computational Approaches for Transforming Healthcare, IIT-Madras 01-04 Feb 2022

#### Research Projects (Major Grants/Research Collaboration) (From 1<sup>st</sup> July 2017 onwards)

- 1) Indo-French Network in High Energy Physics, LIA THEP and CEFIPRA INFRE-HEPNET of CEFIPRA/IFCPAR (2015-). Multi-institutional project involving many universities/institutes of India-France. (PI: Prof. R. Godbole, Prof. F. Boudjema)
- 2) Indo-French project "Composite Models at the Interface of Theory and Phenomenology" (Project

Number. 5904-C, CEFIPRA. (2019-) with Prof. K.Sridhar (TIFR, Mumbai), Prof. D. Choudhury (DU), A. Deandrea, G. Cacciapaglia, N. Mahmoudi (IP2I, Lyon, France), A.Bharucha (Marseille, France)

Awards and Distinctions (From 1<sup>st</sup> July 2017 onwards)

Association With Professional Bodies

Other Activities like MOOCs/ Patents etc. (From 1<sup>st</sup> July 2017 onwards)



Signature of Faculty Member