DALJEET KAUR

CONTACT INFORMATION	B1-380, First Floor Janakpuri, West Delhi, Delhi-110058, India.	*Mobile:* +91-9899979116 *E-mail:* daljeet.kaur97@gmail.com

PERSONAL DETAILS

- Gender: Female
- Date of Birth: 22 January, 1986
- Citizenship: Indian
- Languages known: Hindi, English, Punjabi

Present Status **Working as Assistant Professor at Shri Guru Tegh Bahadur Khalsa College, University of Delhi.**

EDUCATIONAL BACKGROUND

Doctor of Philosophy (Ph.D.) *Experimental Neutrino Physics*, 2010-2016

- **India-based Neutrino Observatory (INO) Experiment.**
- **Thesis Title:** Development and Characterization of RPC detectors and Determination of Neutrino Oscillation Sensitivity for the INO-ICAL detector.
- **Supervisor:** Prof. Md. Naimuddin
- **Institute:** University of Delhi, Delhi, India.

Bachelor of education (B.Ed.), *Science Education*, 2007-2008

- Institute: Dyal Bagh Educational Institute, DyalBagh, Agra, U.P. India.
- Percentage: 74.6%, I^{st} Division.

Master of Science (M.Sc.), *Physics*, 2005-2007

- Institute: Dr. Bhim Rao Ambedkar University, Agra, U.P., India.
- Percentage: 65.66%, I^{st} Division.

Bachelor of Science (B.Sc.), 2002-2005

- Institute: Dr. Bhim Rao Ambedkar University, Agra, U.P., India
- Percentage: 70.37%, I^{st} Division.

Senior Secondary, 2000-2002

- Institute: H.M.S. Inter college, UP Board, Mathura, U.P., India.
- Percentage: 69.0%, I^{st} Division.

Matriculation, 1999-2000

- Institute: P.D.D.S. Vidhya Mandir, CBSE Board, Vrindavan, Mathura, UP, India.
- Percentage: 68.4%, I^{st} Division.

Academic Achievements, Awards & Honors

- **Senior Research Fellowship**: Council of Scientific and Industrial Research (**CSIR**), Government of India: April 2012-2015.
- **Junior Research Fellowship**: Council of Scientific and Industrial Research (**CSIR**), Government of India: April 2010-2012.
- Qualified the **Joint CSIR-UGC National Eligibility Test (NET-JRF)** for Junior Research Fellowship and Eligibility for Lecturer ship in Physical Sciences conducted by CSIR-UGC, India held in June 2009.
- Qualified the Graduate Aptitude Test in Engineering (**GATE**) in the Physics stream in 2009.

Research Experience

- Research experience as PhD scholar (2010-2016).
- Research Associate at Department of physics and astrophysics, University of Delhi on a DST Project entitiled "R&D efforts by University Groups for INO project" from 1.03.2016 to 25.07.2016 (4 months, 25 days).

Teaching Experience

- Worked as Guest Lecturer at SGTB Kahlsa college, University of Delhi from 21^{st} Jan-22^{nd} April 2016.
- Worked as an Assistant professor on Adhoc basis in S.G.T.B. Khalsa College, University of Delhi, from 26 July 2016- 17 October 2022
- Worked as an Assistant professor on Permanent basis in S.G.T.B. Khalsa College, University of Delhi, from 19th October 2022- present

Workshop/Schools/Conferences Organised

- Worked as an instructor at SERC school in Experimental High Energy Physics held at Department of Physics and Astrophysics, University Of Delhi, from April 19 - May 9, 2016.
- Organising Committee Member Of Xxxiii SERB Main School Theoretical High Energy Physics SGTB Khalsa College, University of Delhi 7th - 26th December, 2019

Software Skills

- Languages: C, C++, Scilab, Python, Origin, use of unix shell Scripts
- HEP packages : ROOT, GEANT, GNUPLOT, Latex
- Operating System: Windows and Linux.

Faculty Induction programs/Refresher courses

- One month faculty induction program (21 November 20 December 2022) organised by Teaching Learning center, Ramanujan College, University of Delhi under Ministry of education sponsored scheme.
- Refresher course "Pyhton: essentials, programming and Analytics & Statistics with 'R', Financial database and analysis software" (27th october to 11 th November 2022), organised by University of Delhi and Guru Angad Dev teaching Learning center, SGTB Khalsa college under ministry of education sponsored scheme.

Publications

1. θ_{23} **Octant sensitivity in presence of light sterile and active ν and $\bar{\nu}$ oscillations using beamline experiments**, Nucl. Phys. B **1002** (2024), 116517 doi:10.1016/j.nuclphysb.2024.116517 [**First (sole) author, IF 2.5**]

2. **Effect of non-unitary mixing on the mass hierarchy and CP violation determination at the Protvino to Orca experiment**, Daljeet Kaur et al., Eur.Phys.J.C **84** (2024) 2, 118 e-Print:2110.02917 [hep-ph], doi:10.1140/epjc/s10052-024-12431-3 [**First author, IF 4.2**]

3. **Inaccessibility regions for the sterile neutrino searches at the long baseline experiments**, Daljeet Kaur et al., Nuclear Physics B, Volume **995**, 116319 (2023), doi:10.1016/j.nuclphysb.2023.116319 [**First author, IF 2.5**]

4. **Model-independent test for CPT violation using long-baseline and atmospheric neutrino experiments**, Daljeet Kaur, Physical Review D, Volume **101**, 055017 (2020). doi:10.1103/PhysRevD.101.055017 [**First author (sole author), IF 5.2**]

5. **Independent measurement of muon neutrino and antineutrino oscillations at the INO-ICAL experiment**, Daljeet Kaur et al., J. Phys. G: Nucl. Part. Phys. **46**, 065001 (2019). doi:10.1088/1361-6471/ab11f4 [**Corresponding author, IF 3.5**]

6. **Search for the differences in atmospheric neutrino and antineutrino oscillation parameters at the INO-ICAL experiment**, Physical Review D, Volume **95**, 093005 (2017). doi:10.1103/PhysRevD.95.093005 [**First author, IF 4.4**]

7. **Invited review: Physics Potential of the ICALdetector at the India-based Neutrino Observatory (INO)**, Pramana Journal of physics, volume **88**, page 79 (2017), doi:10.1007/s12043-017-1373-4 [**Co-author, IF 1.9**]

8. **Characterisation of 3 mm glass electrodes and development of RPC detector for INO-ICAL experiment**, Nuclear Instrumentation and Methods (NIM) **A** 774 (2015). doi:10.1016/j.nima.2014.11.035 [**First author, IF 1.5**]

9. **The sensitivity of the ICAL detector at the India-based neutrino observaotry experiment**, European journal of Physics C , volume **75**, page 156 (2015), [First author, IF 4.84]

10. **Simulation studies of Hadron energy resolution as a function of iron plate thickness at ICAL**, Journal of Instrumentation (JINST) **9** T09003 (2014), doi:10.1088/1748-0221/9/09/T09003 [**Co-author, IF 1.3**]

11. **Hadron energy response of the ICAL detector**, Journal of Instrumentation (JINST) **8** P11003 (2013), doi:10.1088/1748-0221/8/11/P11003 [**Co-author, IF 1.3**]

Conference Proceedings

1. The INO-ICAL sensitivity to the separate measurement of neutrino/antineutrino parameters, Springer Proc. Phys, chapter 98, *doi* : 10.1007/978−3−319−73171−1_98 (2018)

2. Neutrino/Anti-neutrino oscillation analysis using non-identical atmospheric oscillation parameters *DAE symposium on nuclear physics, 20-24 december 2017, Thapar University, Patiala (Punjab), India* Proceedings of the DAE Symp. on Nucl. Phys. 62, page:974-975, (2017)

3. Independent measurement of neutrino and antineutrino mass-square splittings at the INO-ICAL experiment *DAE symposium on nuclear physics, 20-24 december 2017, Thapar University, Patiala (Punjab), India* Proceedings of the DAE Symp. on Nucl. Phys. 62, page:984-985, (2017)

4. *CPT violation sensitivity of NoVA, T2K and INO experiments using ν and $\bar{\nu}$ oscillation parameters*, Part of Proceedings, 40th International Conference on High Energy Physics (ICHEP2020) : Prague, Czechia, July 28 - August 6, 2020, PoS ICHEP2020 (2021) 204, *doi* : 10.22323/1.390.0204.

5. *The Measurement of the Difference Between ν and $\bar{\nu}$ Mass-Squared Splittings in Atmospheric and Long-Baseline Neutrino Experiments, Part of Proceedings, 23rd DAE-BRNS High Energy Physics Symposium 2018 : Chennai, India, 10-15 December, 2018, 957-961 Published in: Springer Proc.Phys. 261 (2021) 957-961, doi* : $10.1007/978 - 981 - 33 - 4408 - 2_138$

6. *The INO-ICAL sensitivity to the separate measurement of neutrino/antineutrino parameters*,Springer Proc. Phys, chapter 98, *doi* : 10.1007/978−3−319−73171−1_98 (2018)

7. *Neutrino/Anti-neutrino oscillation analysis using non-identical atmospheric oscillation parameters DAE symposium on nuclear physics, 20-24 december 2017, Thapar University, Patiala (Punjab), India* Proceedings of the DAE Symp. on Nucl. Phys. 62, page:974-975, (2017)

8. *Independent measurement of neutrino and antineutrino mass-square splittings at the INO-ICAL experiment*
   DAE symposium on nuclear physics, 20-24 december 2017, Thapar University, Patiala (Punjab), India Proceedings of the DAE Symp. on Nucl. Phys. 62, page:984-985, (2017)

9. *Precision measurement of neutrino oscillation parameters at INO-ICAL detector*
   International conference on High Energy Physics, 2-9 July 2014 , Valencia, Spain,Nucl.Part.Phys.P 275,2678-2680 (2016)

10. *Precision measurement of neutrino oscillation parameters at INO-ICAL detector, Pramana-J.Phys. vo.86, no.2, page 459-464,Feb-2016*
    International Conference on Unification and Cosmology after Higgs discovery and BICEP2 (UNICOS), Panjab University, Chandigarh India, May 13-15, 2014.

11. *Determination of θ_{23} octant and precision measurement of atmospheric neutrino oscillation parameters @INO-ICAL,Springer Proceeding in Physics 174, DOI 10.1007/978-3-319-25619-1-41*

XXI DAE-BRNS High energy physics symposium,IIT Guwahati, India, Dec 8-12, 2014

12. *Octant of θ_{23} and precision measurement of atmospheric neutrino ocillations at INO-ICAL detector*
Proceedings of the 50^{th} Rencontres de Moriond-Electroweak session, 14-21 March 2015, La Thuile, Italy, ISBN: 978-2-9546400-82.

13. *INO-ICAL detector sensitivity for neutrino oscillation parameters*
Particles and Nuclei International Conference (PANIC), 25-29 August 2014, Hamburg, Germany, DOI:10.3204/DESY-PROC-2014-04/202.

14. *INO-ICAL detector sensitivity for neutrino oscillation parameters*
International Conference on Unification and Cosmology after Higgs discovery and BICEP, Panjab University, Chandigarh India, May 13-15, 2014. Pramana journal of physics, volume 86, page 459-464.

15. *Characterisation of glass electrodes and RPC detectors for INO-ICAL experiment*, Journal of Instrumentation (JINST) **9** C10039, (2014), arXiv:1409.7184.

16. *Study of RPC bakelite electrodes and detector performance for INO-ICAL*, Journal of Instrumentation (JINST) **9** C10042, (2014), arXiv:1409.5522.

17. *Hadron energy resolution and physics analysis at INO-ICAL detector*
DAE symposium on nuclear physics, December 2012, University of Delhi, India
Proceedings of the DAE Symp. on Nucl. Phys. 57 (2012)

18. *Characterisation of different electrode materials and Resistive Plate Chamber detector performance studies*
Proceedings of the DAE Symp. on Nucl. Phys. 59, page 960,INIS Ref.No.46083686 (2014)

DAE symposium on nuclear physics, 8-12 December 2014, Banaras Hindu University, India

International/National Conferences and Workshops Attended

- **Poster** "Long baseline experiments sensitivities in presence of Light sterile neutrinos", XXIV DAE-BRNS Symposium on High Energy Physics, National Institute of Science Education and Research ,Jatni 752050 Odisha India, December 14-18, 2020

- **Poster** "CPT violation sensitivity of NoVA, T2K and INO experiments using ν and $\bar{\nu}$ oscillation parameters", 40th International Conference on High Energy Physics (ICHEP2020) : Prague, Czechia, July 28 - August 6, 2020 [ONLINE]

- **Poster** "Model independent way to test the CPT violation using Nova,T2k and INO experiments" The XXIX International Conference on Neutrino Physics and Astrophysics (NEUTRINO2020), FErmilab USA, June 22 to July 2, 2020 [Online]

- **Talk**"Sensitivities for the difference between ν and $\bar{\nu}$ oscillation parameters at the India-based Neutrino Observatory (INO) "National Symposium on Theoretical High Energy Physics, SGTB Khalsa College, University of Delhi,December 20, 2019.

- **Poster**The Measurement of the Difference Between ν and $\bar{\nu}$ Mass-Squared Splittings in Atmospheric and Long-Baseline Neutrino Experiments,23rd DAE-BRNS High Energy Physics Symposium,10-14 December 2018, Chennai, India

- **Poster** entitled "Neutrino/Anti-neutrino oscillation analysis using non-identical atmospheric oscillation parameters", 62nd DAE-BRNS Symposium on Nuclear Physics : Patiala, India, December 20-24, 2017, 974-975.

- **Talk** entitled "Determination of atmospheric neutrino mixing parameters and Octant of θ_{23} at INO-ICAL detector" presented at 50^{th} **Rencontres de Moriond (EW)** under young scientist forum held at La Thuile, Italy, 14-21st March 2015.

- **Poster** entitled "Precision measurement of neutrino oscillation parameters @ INO-ICAL detector" presented at Interantional conference on high energy physics (**ICHEP**), July 2-9 , 2014, Valencia, Spain.

- **Talk** entitled "Precision measurement of neutrino oscillation parameters at INO-ICAL detector" at International Conference on Unification and Cosmology after Higgs discovery and BICEP2 **UNICOS**, Panjab University, Chandigarh India, May 13-15, 2014.

- **Talk** entitled "INO-ICAL detector sensitivity for the neutrino oscillation paramters" at XXI DAE-BRNS High Energy Physics Symposium, IIT Guwahati, India, Dec 8-12, 2014.

- **Poster** entitled "Hadron Energy resolution at INO-ICAL detector" presented at International workshop on Neutrino Factories, Super beams and Beta beams (**NUFACT-2013**), Beijing, China.

- **Talk** entitled "Future Atmospheric Neutrino Experiments" presented at International Neutrino Summer School (INSS-2013), Beijing, China, 6-16 August 2013.

- **Potser** entitled "Precision measurement of neutrino oscillation parameters at INO-ICAL detector" presented at 20th Particles and Nuclei International Conference (**PANIC-2014**) 25-29 August 2014, Hamburg, Germany.

- **Poster** entitled "Hadron energy resolution at INO-ICAL detector" presented at XX DAE-BRNS High Energy Physics Symposium, Visva-Bharati, Santiniketan, India, Jan 13-18, 2013,

- **Poster** entitled "Hadron energy resolution and physics analysis at INO-ICAL detector" at DAE Symposium on Nuclear Physics, Delhi, India, December 3-7, 2012.

- **Poster** entitled "Hadron Energy Resolution at INO-ICAL detector"presented at National Symposium on particle detector and Instrumentations, Tata institute of fundamental research (TIFR), Mumbai, India, 21-24 March 2012.

- **Poster** entitled "Hadron Energy Resolution at INO-ICAL detector" at Workshop on the frontiers of nuclear and particle physics, Aligarh muslim university, Aligarh, India, March 19-20 2012.

- **Poster** entitled "Precision measurement of neutrino oscillation parameters @ INO-ICAL detector" at Workshop on contemporary trends in high energy physics and instrumentation, 10-11 March, 2014, Chandigarh, India.

- **Posters** entitled "Study of glass electrodes for INO-ICAL RPC detector" and "Study of bakelite RPC and its performance study with variation of gas mixture,temperature and humidity" presented at Workshop on contemporary trends in high energy physics and instrumentation, 10-11 March, 2014, Chandigarh, India.

- **Talk** entitled "Hadron Energy Resolution of INO-ICAL detector" at "SERC school on Experimental high energy physics", Variable energy cyclotron center (VECC), Kolkata, India, 20 June-10 July, 2011.

- Attended "Particle physics at the cross roads", Edinburgh-Delhi Particle phyiscs symposium, India International Center (IIC), Delhi, 15-17 February 2013.

- Frontiers in high energy physics, "Neutrino Lecture series" in celebration of Prof. G Rajasekharan's 75th birthday, IMSc, Chennai, India, 19-21 December 2011.

- Actively participated and presented work in regular INO Collaboration meetings.