

Navdeep Singh Dhindsa

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Employment

◆ **The Institute of Mathematical Sciences (IMSc), Chennai**
Tamil Nadu, India

Post Doctoral Fellow
August 2023 - Present

Academic Qualifications

◆ **Indian Institute of Science Education and Research (IISER), Mohali**
Punjab, India
Thesis Title: Non-perturbative Studies of Non-conformal Field Theories
Supervisor: Dr. Anosh Joseph

PhD, Physics
January 2019 - June 2023

◆ **Punjabi University, Patiala**
Punjab, India

M.Sc., Physics
August 2016 - August 2018

Publications/Conference Proceedings

- ◆ Nonperturbative phase diagram of two-dimensional $N = (2, 2)$ super-Yang–Mills
Navdeep Singh Dhindsa, Raghav G. Jha, Anosh Joseph, and David Schaich
Phys.Rev.D **110** (2024) 5, 054507 (2024) [[arXiv:2312.04980](https://arxiv.org/abs/2312.04980) [*hep-lat*]]
Data Release: doi.org/10.5281/zenodo.10083865
- ◆ Deconfinement Phase Transition in Bosonic BMN Model at General Coupling
Navdeep Singh Dhindsa, Anosh Joseph, Abhishek Samlodia and David Schaich
Springer Proc.Phys. **304** (2024) 1020-1022 (2024) [[arXiv:2308.02538](https://arxiv.org/abs/2308.02538) [*hep-lat*]]
- ◆ Non-perturbative phase structure of the bosonic BMN matrix model
Navdeep Singh Dhindsa, Raghav G. Jha, Anosh Joseph, Abhishek Samlodia and David Schaich
Journal of High Energy Physics **05**, (2022) 169 (2022) [[arXiv:2201.08791](https://arxiv.org/abs/2201.08791) [*hep-lat*]]
Data Release: doi.org/10.5281/zenodo.6462433
- ◆ Large- N limit of two-dimensional Yang–Mills theory with four supercharges
Navdeep Singh Dhindsa, Raghav G. Jha, Anosh Joseph and David Schaich
Proceedings of Science LATTICE2021, 433 (2022) [[arXiv:2109.01001](https://arxiv.org/abs/2109.01001) [*hep-lat*]]
- ◆ Probing Non-perturbative Supersymmetry Breaking through Lattice Path Integrals
Navdeep Singh Dhindsa and Anosh Joseph
European Physical Journal Plus **137**, 1155 (2022) [[arXiv:2011.08109](https://arxiv.org/abs/2011.08109) [*hep-lat*]]

Preprints

- ◆ Exploring Single-Flavor Dibaryons: A lattice perspective
Navdeep Singh Dhindsa, Nilmani Mathur and M. Padmanath
To Publish in *PoS* (2024) [[arXiv:2409.10167](https://arxiv.org/abs/2409.10167) [*hep-lat*]]

Talks Delivered

- ◆ Exploring Single-Flavor Dibaryons: A lattice perspective (July 30, 2024) at **41st International Symposium on Lattice Field Theory (LATTICE2024)**, July 28 - August 3 2024, University of Liverpool, UK
- ◆ Insights into Dibaryon Interactions in the Heavy Quark Sector (July 15, 2024), Physics seminar at **IMSc Chennai**, India
- ◆ Lattice Gauge Theories and Tensors (February 15, 2024), JC talk at **IMSc Chennai**, India
- ◆ Holography from Large Matrices on Lattice and Beyond (October 30, 2023) at **University of the Witwatersrand**, South Africa
- ◆ Large Matrices on Lattice and Holography (March 30, 2023) at **IMSc Chennai**, India
- ◆ Non-perturbative Studies of Non-conformal Field Theories (March 20, 2023) thesis defense talk at **IISER Mohali**, India
- ◆ Large Matrices and Holography (January 24, 2023) review talk at **IISER Mohali**, India
- ◆ (ONLINE) Supersymmetric Theories on Lattice and Holography (November 23, 2022) seminar at **APCTP Pohang**, Korea
- ◆ (ONLINE) Non-perturbative study of Yang-Mills theory with four supercharges in two dimensions (August 08, 2022) at **39th International Symposium on Lattice Field Theory (LATTICE2022)**, August 8 - August 13 2022, University of Bonn, Germany
- ◆ Non-perturbative phase structure of the bosonic BMN matrix model (January 21, 2022) review talk at **IISER Mohali**, India
- ◆ (ONLINE) Non-perturbative study of two-dimensional Yang-Mills with four supercharges at Large N (July 31, 2021) at (Virtual) **Shivalik HEPCATS Meeting Summer 2021**, hosted by IIT Ropar, India
- ◆ (ONLINE) Large- N limit of two-dimensional Yang-Mills theory with four supercharges (July 29, 2021) at **38th International Symposium on Lattice Field Theory (LATTICE2021)**, 26th-30th July 2021, Zoom/Gather @Massachusetts Institute of Technology, USA
- ◆ (ONLINE) Field Theory Matrix Models on Lattice: A Proem (January 30, 2021) at (Virtual) **Shivalik HEPCATS Meeting Winter 2020**, hosted by IISER Mohali, India
- ◆ (ONLINE) Probing Non-perturbative Supersymmetry Breaking through Lattice Path Integrals (November 26, 2020) at **THEP Journal Club**, IISER Mohali, India
- ◆ (ONLINE) Supersymmetric Quantum Mechanics on Lattice using Hamiltonian Monte Carlo (July 31, 2020) at (Virtual) **Shivalik HEPCATS Meeting Summer 2020**, hosted by IISER Mohali, India

Poster Presented

- ◆ Dibaryons: Insights from the Heavy Quark Sector (September 25, 2024) at **Trends in Astroparticle and Particle Physics (TAPP)**, September 25 - September 27 2024, IMSc Chennai, India
- ◆ Non-perturbative lattice studies of exotic multi-quark systems (July 22, 2024) at **School on Continuum Foundations of Lattice Gauge Theories**, July 22 - July 26 2024, CERN, Switzerland
- ◆ Deconfinement phase transition in bosonic BMN model at general coupling (December 15, 2022) at **XXV DAE-BRNS HEP Symposium**, December 12 - December 16 2022, IISER Mohali, India

Conferences/Workshops Attended

- ◆ 41st International Symposium on Lattice Field Theory (LATTICE2024), University of Liverpool, UK (July 28 - August 3 2024)
- ◆ School on Continuum Foundations of Lattice Gauge Theories, CERN, Switzerland (July 22 - July 26 2024)

- ◆ 13th Joburg Theoretical Physics School, University of the Witwatersrand, South Africa (October 23 - October 27, 2023)
- ◆ Observables in Quantum Gravity, IISER Mohali, India (March 23 - March 25, 2023)
- ◆ XXV DAE-BRNS HEP Symposium, IISER Mohali, India (December 12 - December 16, 2022)
- ◆ Nonperturbative and Numerical Approaches to Quantum Gravity, String Theory, and Holography, ICTS-TIFR, India (August 22 - September 02, 2022)
- ◆ (*Virtual*) 39th International Symposium on Lattice Field Theory (LATTICE2022), University of Bonn, Germany (August 8 - 13, 2022)
- ◆ Shivalik HEPCATS Meeting Winter 2021, IISER Mohali, India (December 18, 2021)
- ◆ (*Virtual*) Lattice Practices 2021, The Cyprus Institute, Cyprus (October 6 - 12, 2021)
- ◆ (*Virtual*) Shivalik HEPCATS Meeting Summer 2021, IIT Ropar, India (July 31 - August 01, 2021)
- ◆ (*Virtual*) 38th International Symposium on Lattice Field Theory (LATTICE2021), Massachusetts Institute of Technology, USA (July 26 - 30, 2021)
- ◆ (*Virtual*) Doctoral Training Programme 2021, ECT*, Italy (June 28 - July 23, 2021)
- ◆ (*Virtual*) Shivalik HEPCATS Meeting Winter 2020, IISER Mohali, India (January 30, 2021)
- ◆ (*Virtual*) Nonperturbative and Numerical Approaches to Quantum Gravity, String Theory, and Holography, ICTS-TIFR, India (January 18-21, 2021)
- ◆ (*Virtual*) Asia-Pacific Symposium for Lattice Field Theory (APLAT 2020), KEK Theory Center, Japan (August 04-07, 2020)
- ◆ (*Virtual*) Shivalik HEPCATS Meeting Summer 2020, IISER Mohali, India (July 30 - July 31, 2020)
- ◆ Shivalik HEPCATS Meeting Winter 2019, IISER Mohali, India (December 7, 2019)

Fellowships

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| <ul style="list-style-type: none"> ◆ CSIR Senior Research Fellowship
<i>Human Resource Development Group (HRDG),</i>
Council of Scientific & Industrial Research (CSIR), Government of India. | February 2021 - March 2023 |
| <ul style="list-style-type: none"> ◆ CSIR Junior Research Fellowship
<i>Human Resource Development Group (HRDG),</i>
Council of Scientific & Industrial Research (CSIR), Government of India. | January 2019 - January 2021 |

Teaching Experience

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| <ul style="list-style-type: none"> ◆ PHY304, Statistical Mechanics
<i>Grader</i> | IISER, Mohali
<i>January 2022 - April 2022</i> |
| <ul style="list-style-type: none"> ◆ PHY635, Gravitation and Cosmology
<i>Grader</i> | IISER, Mohali
<i>September 2021 - December 2021</i> |
| <ul style="list-style-type: none"> ◆ PHY 112, Physics Laboratory II
<i>Teaching Assistant</i> | IISER, Mohali
<i>May 2021 - July 2021</i> |
| <ul style="list-style-type: none"> ◆ PHY304, Statistical Mechanics
<i>Grader</i> | IISER, Mohali
<i>January 2021 - April 2021</i> |
| <ul style="list-style-type: none"> ◆ PHY 112, Physics Laboratory II
<i>Teaching Assistant</i> | IISER, Mohali
<i>January 2020 - March 2020</i> |

Organizational Activities

- ◆ Student coordinator for **XXV DAE-BRNS HEP Symposium** 2022 at IISER Mohali, India

- ◆ Co-organizer of **HEP Journal Club** in Spring 2022 semester at IISER Mohali, India
- ◆ Student coordinator for (*Virtual*) **Shivalik HEPCATS Meeting Winter 2021**, IISER Mohali, India
- ◆ Co-organized (*Virtual*) **MPI Workshop** from April 26, 2021 to April 29, 2021 at IISER Mohali, India
- ◆ Student coordinator for (*Virtual*) **Shivalik HEPCATS Meeting Summer 2020** and (*Virtual*) **Shivalik HEPCATS Meeting Winter 2020** hosted at IISER Mohali, India
- ◆ Organizer of **Lattice Journal Club** at IISER Mohali in Spring and Fall 2020 semesters and Spring 2021 Semester.

Expertise

- ◆ **Technical:** C/C++/Fortran, LaTeX, Gnuplot, Matlab, MPI, Bash, Python.
- ◆ **Languages:** Punjabi, English, Hindi.

Mentoring Experience

- ◆ I was a scholar mentor for various Summer interns and Masters thesis students in Lattice Field Theory group at IISER Mohali.

Last updated : September 18, 2024