Siddharth Dwivedi

CURRICULUM VITÆ

Department of Physics,
CURAJ, Ajmer, India
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Personal Data

Date of Birth: July 15, 1987
Citizenship: Indian
Languages: Hindi, native language
English, proficient user

Research Interests

- Qauntum entanglement in topological QFT.
- Knot theory and other related topics.

Present Position

Assistant Professor, Department of Physics, School of Physical Sciences, Central University of Rajasthan, Ajmer, India.

Education

2004 – 2007: **Bachelor of Science (B.Sc.)**
Subjects: Physics, Mathematics
Institute: University of Allahabad, India
Percentage: 75%

2007 – 2009: **Master of Science (M.Sc.)**
Subject: Physics
Institute: Indian Institute of Technology Bombay, Mumbai, India
CGPA: 8.9/10

2009 – 2014: **Ph.D., Physics**
Ph.D. Supervisor: Prof. Pichai Ramadevi
Thesis Title: Quiver gauge theories on $M2$-branes and Fano threefolds
Thesis defense: November 18, 2014, Thesis awarded: August 08, 2015
Institute: Indian Institute of Technology Bombay, Mumbai, India

Postdoctoral Experience

12/2014 – 03/2016: Department of Physics, Indian Institute of Technology Kanpur, India.
03/2017 – 07/2022: Center for Theoretical Physics, Sichuan University, China.

Visiting Fellowships

02/2012 – 07/2012: **Canadian Commonwealth Scholarship Program**
Department of Physics, McGill University, Canada.

05/2016 – 07/2016: Department of Physics, University of Johannesburg, South Africa.

08/2016 – 02/2017: Department of Physics, Indian Institute of Technology Bombay, India.

Scholastic Achievements

- Gold Medalist in Physics in the undergraduate course (Recipient of the 'Meghnad Saha Centenary Gold Medal' for securing highest marks in Physics in B.Sc. exam at Allahabad University).
- Won the 'YJK Singh Gold Medal' and 'Prof. Rajendra Singh Award' for securing the highest marks in Physics in first-year undergraduate exam.
- Ranked first in the MSc-PhD Dual Degree batch in IIT Bombay.
- Secured a rank of 9 in the NET-JRF exam conducted by CSIR-UGC.
- Secured a rank of 136 in Physics and 49 in Mathematics in the Joint Admission Test for M.Sc. (JAM-2007).
- Placed among the top 10% in the National Graduate Physics Examination (2007) held in India.
- Selected for the 'Canadian Commonwealth Scholarship Program' 2011-2012.

Research Publications

1. **Exploring the orthosymplectic zoo**
   Authors: *M. Akhond*, *F. Carta*, *S. Dwivedi*, *H. Hayashi*, *S.S. Kim*, *F. Yagi*
   Journal: ***Journal of High Energy Physics***
   DOI: 10.1007/JHEP05(2022)054
2. **Topological entanglement and hyperbolic volume**
   Authors: *A. Dwivedi*, *S. Dwivedi*, *B.P. Mandal*, *P. Ramadevi*, *V.K. Singh*
   Journal: ***Journal of High Energy Physics***
   DOI: 10.1007/JHEP10(2021)172
3. **Factorised 3d $\mathcal{N} = 4$ orthosymplectic quivers**
   Authors: *M. Akhond*, *F. Carta*, *S. Dwivedi*, *H. Hayashi*, *S.S. Kim*, *F. Yagi*
   Journal: ***Journal of High Energy Physics***
   DOI: 10.1007/JHEP05(2021)269
4. **Five-brane webs, Higgs branches and unitary/orthosymplectic magnetic quivers**
   Authors: *M. Akhond*, *F. Carta*,*S. Dwivedi*, *H. Hayashi*, *S.S. Kim*, *F. Yagi*
   Journal: ***Journal of High Energy Physics***
   DOI: 10.1007/JHEP12(2020)164
5. **Semiclassical limit of topological Renyi entropy in $3d$ Chern-Simons theory**
   Authors: *S. Dwivedi*, *V.K. Singh*, *A. Roy*
   Journal: ***Journal of High Energy Physics***
   DOI: 10.1007/JHEP12(2020)132

6. **Multi-boundary entanglement in Chern-Simons theory with finite gauge groups**
   Authors: *S. Dwivedi*, *A. Addazi*, *Y. Zhou*, *P. Sharma*
   Journal: ***Journal of High Energy Physics***
   DOI: 10.1007/JHEP04(2020)158
7. **Entanglement on multiple S^2 boundaries in Chern-Simons theory**
   Authors: *S. Dwivedi*, *V.K. Singh*, *P. Ramadevi*, *Y. Zhou*, *S. Dhara*
   Journal: ***Journal of High Energy Physics***
   DOI: 10.1007/JHEP08(2019)034
8. **Entanglement on linked boundaries in Chern-Simons theory with generic gauge groups**
   Authors: *S. Dwivedi*, *V.K. Singh*, *S. Dhara*, *P. Ramadevi*, *Y. Zhou*, *L.K. Joshi*
   Journal: ***Journal of High Energy Physics***
   DOI: 10.1007/JHEP02(2018)163
9. **Embedding and partial resolution of complex cones over Fano three-folds**
   Author: *S. Dwivedi*
   Journal: ***Annals of Physics***
   DOI: 10.1016/j.aop.2016.10.007
10. **Is toric duality a Seiberg-like duality in (2+1)-d?**
    Authors: *S. Dwivedi*, *P. Ramadevi*
    Journal: ***Journal of High Energy Physics***
    DOI: 10.1007/JHEP07(2014)084
11. **Partial Resolution of Complex Cones over Fano B**
    Authors: *S. Dwivedi*, *P. Ramadevi*
    Journal: ***Advances in High Energy Physics***
    DOI: 10.1155/2013/295842
12. **Inverse algorithm and $M2$-brane theories**
    Authors: *S. Dwivedi*, *P. Ramadevi*
    Journal: ***Journal of High Energy Physics***
    DOI: 10.1007/JHEP11(2011)111

Invited Talks/Seminars

July 27, 2022 **Multi-boundary entanglement: Recent developments**
Strings, Branes, and Gauge Theories Workshop (SBG 2022)
Seoul National University, South Korea

Aug 13, 2019 **Multi-boundary Entanglement in Topological QFT**
Department of Physics, IIT Jodhpur, India

Aug 20, 2018 **Entanglement structure of a state on multi-torus boundary**
Quantum Spacetime Seminar Series, TIFR, Mumbai, India

Feb 15, 2018 **Entanglement structure on multi-torus boundary**
Hebrew University, Israel

Oct 19, 2017 **Entanglement for link state on torus boundaries in Chern-Simons theory**
International Workshop on Superconformal Theories 2017, Chengdu, China

May 19, 2017 **Multi-boundary quantum entanglement in Chern-Simons theory**
Center for Theoretical Physics, Sichuan University, Chengdu, China

Aug 20, 2015 **Counting Orbifolds (Part-II)**
Department of Physics, IIT Kanpur, India

Aug 13, 2015 **Counting Orbifolds (Part-I)**
Department of Physics, IIT Kanpur, India

Jul 17, 2015 **M2-branes and Fano threefolds**
Department of Physics, University of Johannesburg, South Africa

Jul 10, 2012 **Forward and Inverse algorithms**
Department of Physics, McGill University, Montreal, Canada

Jul 25, 2014 **Quiver gauge theories and Fano threefolds**
Department of Physics, NISER, Bhubaneswar, India

Jun 23, 2014 **Quiver gauge theories and Fano threefolds**
Department of Physics, IIT Kanpur, India

Dec 26, 2013 **Toric Duality vs Seiberg Duality**
National Strings Meeting 2013,
Department of Physics, IIT Kharagpur, India

Oct 01, 2013 **Brane Tilings**
Department of Physics, Harish-Chandra Research Institute, Allahabad, India

Sep 12, 2013 **Forward and Inverse Algorithms**
Department of Physics, Harish-Chandra Research Institute, Allahabad, India

Dec 18, 2012 **Fano threefolds and quiver gauge theories**
Indian Strings Meeting 2012, Puri, India

Dec 18, 2011 **Quiver gauge theories on $M2$ branes at the tip of singular Calabi-Yau fourfolds**
National Strings Meeting 2011,
Department of Physics and Astrophysics, University of Delhi, Delhi, India

Conferences/Workshops Attended

July 2022 **Workshop on Strings, Branes, and Gauge Theories 2022 (SBG 2022)**
Seoul National University, South Korea

October 2017 **International Workshop on Superconformal Theories 2017**
Sichuan University, Chengdu, China

December 2016 **Indian Strings Meeting 2016**
IISER Pune, India

December 2015 **Indo-Israel string theory meeting**
Goa, India

December 2014 **Indian Strings Meeting 2014**
Puri, India

January 2014 **8th Asian Winter School on strings, particles and cosmology**
Puri, India

December 2013 **National Strings Meeting 2013**
IIT Kharagpur, India

December 2012 **Indian Strings Meeting 2012**
Puri, India

January 2012 **Asian Winter School on Strings, Particles and Cosmology**
Kusatsu, Gunma, Japan

December 2011 **National Strings Meeting 2011**
Department of Physics and Astrophysics, University of Delhi, India

March 2011 **Spring School on Superstring Theory and Related Topics**
ICTP, Trieste, Italy

January 2011 **XXVI SERC Main School in Theoretical High Energy Physics**
Centre for Theoretical Physics, Jamia Millia Islamia, New Delhi, India
Courses: Black hole physics, New Physics at LHC, Inflationary Cosmology

January 2011 **Indian Strings Meeting 2011**
Puri, India

September 2010 **School on Loop Quantum Gravity**
Institute of Mathematical Sciences (IMSc), Chennai, India

April 2010 **XXV SERC Main School in Theoretical High Energy Physics**
Department of Physics, Panjab University, Chandigarh, India
Courses: Perturbative QCD, GUTs: Flavour physics and leptogenesis, SM Higgs and Top physics at LHC and AdS/CFT and Hydrodynamics

February 2010 **National Strings Meeting 2010**
Department of Physics, IIT Bombay, India

October 2009 **Preparatory SERC School in Theoretical High Energy Physics**
Department of Physics, IIT Madras, India
Courses: Quantum field theory, Group theory, Particle physics and standard model, General relativity and Cosmology, Statistical methods in physics

Teaching: Courses undertaken

1. **Quantum Mechanics I** (MSc course)
2. **Quantum Mechanics II** (MSc course)
3. **Nuclear and Particle Physics** (MSc course)
4. **Mechanics (UG course)** (UG course)
5. **Basic Electronics Lab** (UG Lab)

Faculty Development Programs undertaken

1. "**4-Week Faculty Induction/Orientation Programme**"
   Duration: December 21, 2022 – January 19, 2023
   Organized by: Teaching Learning Centre, Ramanujan College, Delhi University.
2. "**Two - Week Interdisciplinary Refresher Course in Advanced Research Methodology**"
   Duration: December 22, 2022 – January 05, 2023
   Organized by: Teaching Learning Centre, Ramanujan College, in collaboration with Janki Devi Memorial College, Delhi University.