

Research Interests

- Applications of derived and noncommutative algebraic geometry to high energy physics, with an eye towards mathematical formulations of string dualities
- Realizations of integrable systems in string theory and gauge theory
- Applications of the above to geometric representation theory and enumerative geometry

Education

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| <i>September 2017—
present</i> | Degree: PhD in Mathematics
Where: Perimeter Institute for Theoretical Physics, &
University of Toronto
Advisor: Kevin Costello
Expected May 2023 |
| <i>September 2016—
May 2017</i> | Degree: MS in Physics
Where: Perimeter Institute for Theoretical Physics, &
University of Waterloo
Advisor: Kevin Costello
Perimeter Scholars International Program |
| <i>August 2013—
May 2016</i> | Degree: BS in Mathematics
Where: University of Texas at Austin

Advisor: David Ben-Zvi |

Selected Writing

- S. Raghavendran, I. Saberi, and B. Williams *Twisted eleven-dimensional supergravity*, 2021. Submitted. [arXiv:2111.03049](#)
- N. Ishtiaque, S.F. Moosavian, S. Raghavendran, and J. Yagi *Superspin chains from superstring theory*, 2021. Submitted. [arXiv:2110.15112](#)
- S. Raghavendran and P. Yoo *Twisted S-Duality*, 2019. [arXiv:1910.13653](#)
- S. Raghavendran *Mathematical Aspects of Supersymmetric Field Theories*, 2017. (Master's Thesis)
- S. Raghavendran *Quantum Field Theory for Homological Algebraists*, 2016. (Undergraduate Thesis)

Selected Talks

- “Twisted eleven-dimensional supergravity and exceptional lie algebras” Oxford Junior Geometry and Physics seminar, 2021
- “Twisted S-duality”, Heidelberg, Mainz, Munich, Vienna joint Mathematical Physics seminar, 2021
- “BV Quantization of the Rozansky-Witten Model”, Perimeter Institute Learning Seminar on Rozansky-Witten Theory, 2020
- “Slodowy Varieties, Parabolic W-algebras, and an Introduction to Shifted Yangians”, University of Toronto Geometric Representation Theory Learning Seminar, 2020
- “The Springer Correspondence”, University of Toronto Geometric Representation Theory Learning Seminar, 2019
- “One-dimensional Chern Simons theory and the \hat{A} -genus”, Perimeter Institute Renormalization and Effective Field Theory Learning Seminar, 2019
- “Khovanov Homology, Coherent Convolution 2-Categories, and Surface Defects in 5d $\mathcal{N} = 2$ Gauge Theory”, BIRS workshop on Quantum Field Theory and Factorization Algebras, 2019

Pedagogy

*May 2021—
June 2021*

Position: Teaching Assistant (Linear Algebra MAT224)
Where: Department of Mathematics, University of Toronto

*May 2020—
June 2020*

Position: Teaching Assistant (Linear Algebra MAT224)
Where: Department of Mathematics, University of Toronto

*September 2019—
December 2019*

Position: Teaching Assistant (Linear Algebra MAT188)
Where: Department of Mathematics, University of Toronto

*September 2019—
December 2019*

Position: Teaching Assistant (Calculus MAT186)
Where: Department of Mathematics, University of Toronto

Technical Skills

Software

Mathematica, Python, L^AT_EX

Outreach

- Mentoring an undergraduate student on *Heat Kernels and Dirac Operators*
- Mentored two high school students in introductory fluid dynamics and differential geometry of curves and surfaces (January 2021-May 2021)