

# Combinatorics of Fundamental Physics Workshop

## November 18-22, 2024

*\*All lectures in Wolfensohn Hall unless noted otherwise\**

(as of 11/15/24)

Time:	Monday, November 18th	Tuesday, November 19th	Wednesday, November 20th	Thursday, November 21st	Friday, November 22nd
9:00 – 9:30 am	<b>Registration</b>				
9:30 – 10:00 am	<b>Welcome and Introduction</b>				
10:00 – 11:00 am	“Amplituhedra and origami” Pavel Galashin	“Kinematic Flow and Differential Equations for Cosmological Correlators” Austin Joyce	“Hopf algebras in the cohomology of $A_g$ ” Melody Chan	“Combinatorics and geometry of the amplituhedron” Lauren Williams	“Aspects of Correlators and Amplitudes” Song He
11:00 – 11:30 am	<b>Coffee Break</b> (Rubenstein Commons)	<b>Coffee Break</b> (Rubenstein Commons)	<b>Coffee Break</b> (Rubenstein Commons)	<b>Coffee Break</b> (Rubenstein Commons)	<b>Coffee Break</b> (Rubenstein Commons)
11:30 am – 12:30 pm	“Probing moduli space cohomology using quantum field theory” Michael Borinsky	“Euler discriminant of complements of hyperplanes” Claudia Fevola	“Cluster structures on kinematic spaces” Lara Bossinger	“Loop Integration: Phenomenology, Polemics, and Prospects Ahead” Jacob Bourjaily	“Polypositroids” Alex Postnikov
1:00 – 2:00 pm	<b>Lunch</b> (Simons Hall)	<b>Lunch</b> (Simons Hall)	<b>Lunch</b> (Simons Hall)	<b>Lunch</b> (Simons Hall)	<b>Lunch</b> (Simons Hall)
2:00 – 3:00 pm		“Non-planar on-shell diagrams” Jaroslav Trnka	“Adjoint and canonical differential forms” Simon Telen	“Combinatorics on words in string amplitudes” Oliver Schlotterer	<b>End of Program</b>
2:30 – 3:30 pm	IAS High Energy Physics Seminar Thomas Lam				
	<b>Afternoon Tea</b> (Rubenstein Commons) <b>3:30 – 4:00 pm</b>	<b>Afternoon Tea</b> (Rubenstein Commons) <b>3:00 – 3:30 pm</b>	<b>Afternoon Tea</b> (Rubenstein Commons) <b>3:00 – 4:00 pm</b>	<b>Afternoon Tea</b> (Rubenstein Commons) <b>3:00 – 3:30 pm</b>	
3:30 – 4:30 pm		“Canonical forms of oriented matroids” Chris Eur		“Topological aspects in algebraic optimizations” Botong Wang	
4:00 – 5:00 pm	“Combinatorics of Symbol Alphabets in $N=4$ Yang-Mills” Anastasia Volovich		“Adventures in configuration space” Nick Early		
4:30 – 6:00 pm		<b>Reception</b> (Rubenstein Commons)		Short Talks*	
5:30 – 8:00 pm			<b>Pizza Night</b> (Rubenstein Commons)		

**\*Schedule for Short Talks:**

- 4:35-4:50pm: Shounak De: "A canonical basis for cosmological correlators from the positive geometry of cuts"
- 4:55-5:10pm: Dawei Shen: "Points on rational normal curves and the ABCT variety"
- 5:15-5:30pm: Qu Cao: "Loop integrands in Yang-Mills theory from the forward limit"
- 5:35-5:50pm: Raluca Vlad: "Wondertopes"