

92024 LANGENHOP LECTURE & SIU CONFERENCE

Session: Representation Theory and Automorphic Forms

Location: Neckers 240, 1245 Lincoln Drive, Carbondale, IL 62901

This is the same location for Keynote lectures, the Langenhop lecture, and the session on Representation Theory and Automorphic Forms.

Thursday, May 16, 2024

8:00-9:00 Registration and Coffee/Breakfast

9:00-9:50 Keynote lecture 1

Speaker: Freydoon Shahidi

Title: L - Functions and Langlands Program

Session: Representation Theory and Automorphic Forms, 10:10-12:10

10:10-11:00	Baiying Liu	Recent progress on certain problems related to local Arthur packets of classical groups
11:10-11:30	Aranya Lahiri	Dagger Groups and p-adic distribution algebras
11:40-12:00	Manisha Varahagiri	Continuous Principal Series Representations of reductive p-adic groups on p-adic Banach Spaces

Lunch: 12:10-1:30

Session: Representation Theory and Automorphic Forms, 1:30-3:30

1:30-2:20	Claus Sorensen	Projective smooth representations modulo p
2:30-2:50	Ayan Maiti	Weyl's Law for Arbitrary Archimedean Type
3:00-3:20	Devjani Basu	p-Modular Representations of SL_3 over a Finite Field

Group photo, coffee break 3:30-4:00

4:00-5:15 Langenhop Lecture

Speaker: Ken Ono

Title: "Diophantine equations" in partition functions

Dinner at Alto Vineyards 6:15-8:15

Friday, May 17, 2024

8:00-9:00 Coffee/Breakfast

9:00-9:50 Keynote lecture 2

Speaker: Louis Kauffman

Title: Coloring Trivalent Graphs, Penrose State Sums and Virtual Knot Theory

Session: Representation Theory and Automorphic Forms, 10:10-12:10

10:10-11:00	Matthias Strauch	Resolutions for locally analytic representations
11:10-12:00	Joseph Hundley	Functorial Descent in the Exceptional Groups

Lunch: 12:10-1:30

1:30-2:20 Keynote lecture 3

Speaker: Robin Wilson

Title: The Topological Symmetry Groups of the Petersen and Heawood Families

2:30-3:20 Keynote lecture 4

Speaker: Stephen DeBacker

Title: Nilpotent orbits and Cartan subalgebras in reductive p-adic groups

Coffee break 3:20-3:40

Session: Representation Theory and Automorphic Forms, 3:40-5:30

3:40-4:00	Alexander Hazeltine	The Adams conjecture and intersections of local Arthur packets
4:10-4:30	Chi-Heng Lo	An upper bound for wavefront sets of admissible representations of p-adic groups

Pizza 5:30

2024 LANGENHOP LECTURE AND SIU MATHEMATICS CONFERENCE

INTEGRAL QUADRATIC FORMS SESSION

All conference activities except for the Thursday evening dinner will be held in the Neckers Building, 1245 Lincoln Drive, Carbondale IL 62901.

THURSDAY, MAY 16 SCHEDULE

8:00-9:00 Registration and Coffee/Breakfast – Neckers Atrium

9:00-9:50 Keynote Lecture 1 – Neckers 240

Speaker: Freydoon Shahidi Title: L-Functions and Langlands Program

10:10-12:10 Integral Quadratic Forms Session I – Neckers 440

10:10-10:20	Andy Earnest	Welcome & Introduction
10:20-11:10	Lenny Fukshansky	Deep hole lattices and isogenies of elliptic curves
11:15-11:40	Archisman Bhattacharjee	Universal binary quadratic forms
11:45-12:10	Koustav Mondal	Universality of congruent quadratic forms

12:10-1:30 Lunch – Neckers Atrium

1:30-3:30 Integral Quadratic Forms Session II – Neckers 440

1:30-2:20	Wai Kiu Chan	Can we recover an integral quadratic form by representing all its proper subforms?
2:30-2:55	Felipe Valdes Gonzalez	Recoverability of the lattice $\langle 1 \rangle \perp A_n$ for any $n > 1$
3:05-3:30	Ester Sgallova	Pythagoras numbers in biquadratic fields

3:30-4:00 Group Photo and Coffee Break

4:00-5:15 Langenhop Lecture – Neckers 240

Speaker: Ken Ono Title: “Diophantine equations” in partition functions

6:15-8:15 Dinner – Alto Vineyards, 8515 Illinois 127, Alto Pass IL 62905

FRIDAY, MAY 17 SCHEDULE

8:00-9:00 Coffee/Breakfast – Neckers Atrium

9:00-9:50 Keynote Lecture 2 – Neckers 240

Speaker: Louis Kauffman Title: Coloring trivalent graphs, Penrose state sums, and virtual knot theory

10:10-12:10 Integral Quadratic Forms Session III – Neckers 440

10:10-11:00	Pete Clark	Densities of integer sets represented by quadratic forms
11:05-11:55	Eran Assaf	Hilbert modular forms from orthogonal modular forms on quaternary lattices
12:00-12:10	Larry Gerstein	Two questions on lattice invariants

12:10-1:30 Lunch – Neckers Atrium

1:30-2:20 Keynote Lecture 3 – Neckers 240

Speaker: Robin Wilson Title: The topological symmetry groups of the Petersen and Heawood families

2:30-3:20 Keynote Lecture 4 – Neckers 240

Speaker: Stephen DeBacker Title: Nilpotent orbits and Cartan subalgebras in reductive p-groups

3:20-3:40 Coffee Break – Neckers Atrium

3:40-5:00 Integral Quadratic Forms Session IV – Neckers 440

3:40-4:30	Maxwell Forst	On lattice extensions
4:35-5:00	Sehun Jeong	Primitive elements in number fields and Diophantine avoidance

5:30-? Pizza – Neckers Atrium

2024 LANGENHOP LECTURE & SIU CONFERENCE

Session: Partial Differential Equations

Location: Neckers 218, 1245 Lincoln Drive, Carbondale, IL 62901

Thursday, May 16, 2024

8:00-9:00 Registration and Coffee/Breakfast

9:00-9:50 Keynote lecture 1

Speaker: Freydoon Shahidi

Title: L - Functions and Langlands Program

Session: Partial Differential Equations, 10:10-12:00

10:10-11:00	Cheikh Ndiaye	Morse Theory and the resonant T-curvature equation
11:10-12:00	Lei Zhang	Asymptotic Analysis and Uniqueness of blowup solutions of non-quantized singular mean field equations

Lunch: 12:10-1:30

Session: Partial Differential Equations, 1:30-3:30

1:30-2:20	John Villavert	Existence and non-existence results for elliptic systems on bounded and unbounded domains
2:30-3:20	Henri Schurz	4 th Order Stochastic PDEs with Q-Regular Space-Time Noise

Group photo, coffee break 3:30-4:00

4:00-5:15 Langenhop Lecture

Speaker: Ken Ono

Title: "Diophantine equations" in partition functions

Dinner at Alto Vineyards 6:15-8:15

Friday, May 17, 2024

8:00-9:00 Coffee/Breakfast

9:00-9:50 Keynote lecture 2

Speaker: Louis Kauffman

Title: Coloring Trivalent Graphs, Penrose State Sums and Virtual Knot Theory

Session: Partial Differential Equations, 10:10-12:10

10:10-11:00	Carlo Morpurgo	Adams and Moser-Trudinger inequalities
11:10-12:00	Ali Maalaoui	A Flow approach to Prescribing the Q' - curvature on Pseudo-Einstein 3-Manifolds

Lunch: 12:10-1:30

1:30-2:20 Keynote lecture 3

Speaker: Robin Wilson

Title: The Topological Symmetry Groups of the Petersen and Heawood Families

2:30-3:20 Keynote lecture 4

Speaker: Stephen DeBacker

Title: Nilpotent orbits and Cartan subalgebras in reductive p-adic groups

Coffee break 3:20-3:40

Session: Partial Differential Equations, 3:40-5:30

3:40-4:30	Haseeb Ansari	Uniform Boundedness and Long-time behavior of Solutions to an SI model with Intermittent Treatment
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Pizza 5:30

2024 LANGENHOP LECTURE & SIU CONFERENCE

Session: Geometry Broadly Understood

Location: Neckers 156, 1245 Lincoln Drive, Carbondale, IL 62901

Thursday, May 16, 2024

8:00-9:00 Registration and Coffee/Breakfast

9:00-9:50 Keynote lecture 1

Speaker: Freydoon Shahidi

Title: L - Functions and Langlands Program

Session: Geometry Broadly Understood, 10:10-11:30

10:10-11:00	Louis Kauffmam	Mock Alexander Polynomials [joint work with Neslihan Gugumcu]
11:10-11:30	Philip Feinsilver	Symmetric functions via a class of Markov chains

Lunch: 12:10-1:30

Session: Geometry Broadly Understood, 1:30-3:20

1:30-2:00	Bogdan Petrenko	Generalizations of Arnold's Version of Euler's Theorem for matrices
2:10-2:40	Robert Owczarek	Constructing new topological invariants of manifolds, differential geometric aspects
2:50-3:20	Hanna Makaruk	Topological Invariant of Manifolds - Research on Manifolds Beyond the Lie Groups

Group photo, coffee break 3:30-4:00

4:00-5:15 Langenhop Lecture

Speaker: Ken Ono

Title: "Diophantine equations" in partition functions

Dinner at Alto Vineyards 6:15-8:15

Friday, May 17, 2024

8:00-9:00 Coffee/Breakfast

9:00-9:50 Keynote lecture 2

Speaker: Louis Kauffman

Title: Coloring Trivalent Graphs, Penrose State Sums and Virtual Knot Theory

Session: Geometry Broadly Understood, 9:00-12:00

9:00-10:00	Louis Kauffman	Coloring Trivalent Graphs, Penrose State Sums and Virtual Knot Theory
10:10-10:40	Stacey Staples	Zeros of zeon polynomials
10:50-11:20	Ronald White	Enhanced power graphs of finite Moufang loops
11:30-12:00	Robert Owczarek	Abstractions on Koopman's theory of dynamical systems

Lunch: 12:10-1:30

1:30-2:20 Keynote lecture 3

Speaker: Robin Wilson

Title: The Topological Symmetry Groups of the Petersen and Heawood Families

2:30-3:20 Keynote lecture 4

Speaker: Stephen DeBacker

Title: Nilpotent orbits and Cartan subalgebras in reductive p-adic groups

Coffee break 3:20-3:40

Pizza 5:30

2024 LANGENHOP LECTURE & SIU CONFERENCE

Session: Steinberg Model of the Braid Group

Location: Neckers 356, 1245 Lincoln Drive, Carbondale, IL 62901

Thursday, May 16, 2024

8:00-9:00 Registration and Coffee/Breakfast

9:00-9:50 Keynote lecture 1

Speaker: Freydoon Shahidi

Title: L - Functions and Langlands Program

Lunch: 12:10-1:30

Group photo, coffee break 3:30-4:00

4:00-5:15 Langenhop Lecture

Speaker: Ken Ono

Title: "Diophantine equations" in partition functions

Dinner at Alto Vineyards 6:15-8:15

Friday, May 17, 2024

8:00-9:00 Coffee/Breakfast

9:00-9:50 Keynote lecture 2

Speaker: Louis Kauffman

Title: Coloring Trivalent Graphs, Penrose State Sums and Virtual Knot Theory

Session: Steinberg Model of the Braid Group, 10:10-12:10

10:20-11:00	Nathan Broaddus	Preliminary results on the Steinberg module of the braid group
11:00-11:40	Anisha Nu'Man	Steinberg modules for low braid index

Lunch: 12:10-1:30

1:30-2:20 Keynote lecture 3

Speaker: Robin Wilson

Title: The Topological Symmetry Groups of the Petersen and Heawood Families

2:30-3:20 Keynote lecture 4

Speaker: Stephen DeBacker

Title: Nilpotent orbits and Cartan subalgebras in reductive p-adic groups

Coffee break 3:20-3:40

Pizza 5:30