Week 2 Schedule

Events for: Monday, July 8th - Friday, July 12th

	Monday, July 8th
8:30am	Workshop: Breakfast - SCGP Cafe
	Title: Breakfast
9:30am	Workshop Mini-course 1: Tamás Hausel - SCGP, 102
	Speaker: Tamás Hausel
	Title: Mirror symmetry and big algebras
	Abstract: After surveying some mirror symmetry phenomena in the geometry of Langlands dual Hitchin systems, we will model the Hitchin system on cominuscule upward flows by the equivariant cohomology of cominuscule flag varieties like the Grassmannian. Then we will explain how mirror symmetry implies a synthetic BNR correspondence. To generalise to the non-minuscule case we will construct a big commutative subalgebra of the Kirillov algebra to model the mirror of the universal principal bundle in an irreducible representation. We will discuss various aspects of big algebras such as their geometric interpretation in terms of equivariant cohomology of affine Schubert varieties, their symmetries, their anatomy, including their skeletons, multiplicity algebras, nerves and crystals. We will visualize some small examples related to baryon multiplet.

10:45am Workshop: Coffee Break - SCGP Cafe

Title: Coffee Break

11:30am Workshop Mini-course 1: Claire Voisin - SCGP 102

Speaker: Claire Voisin

Title: The smoothing problem for algebraic cycles

Abstract: The Chow moving lemma allows us to put in general position any cycle on a smooth algebraic variety, which is very important for intersection theory. However, even if we start with a smooth subvariety, the cycles in general position we get by following the Chow method are cycles of singular subvarieties. I will discuss in these lectures the method I developed with Kollár to solve a related question, first asked by Borel and Haefliger, aboutrepresenting any cycle by a cycle of smooth subvarieties, which we solve affirmatively below the middle dimension.

12:45pm Workshop: Lunch - SCGP Cafe

Title: Lunch

3:30pm Tea Break - SCGP Cafe

Tuesday, July 9th

8:30am Workshop: Breakfast - SCGP Cafe

Title: Breakfast

9:30am Workshop Mini-course 1: Laurent Fargues - SCGP 102

Speaker: Laurent Fargues

Title: The moduli of G-bundles on the curve

Abstract: I will begin by explaining the basic constructions involving the curve in p-adic Hodge theory as it showed up in my joint work with Fontaine. I will then explain the structure of the moduli of G-bundles on the curve as it shows up in my joint work with Scholze were we use it to construct the semi-simple local Langlands correspondence for any p-adic reductive group. I will at the end explain the structure of the category of etale sheaves on this moduli.

11:00am Group Photo - SCGP Lobby

Title: Group Photo

11:30am Workshop: Lunch - SCGP Cafe

Title: Lunch

2:00pm Workshop Moduli Journal Launch Celebration: Denis Nesterov - SCGP 102 Speaker: Denis Nesterov

Title: On quasimap invariants of moduli spaces of Higgs bundles

2:30pm Workshop Moduli Journal Launch Celebration: Claire Voisin - SCGP 102 Speaker: Claire Voisin

Title: ?Symmetric tensors on the intersection of two quadrics and Lagrangian fibration

3:00pm Tea Break - SCGP Cafe

3:30pm Workshop Moduli Journal Launch Celebration: Navid Nabijou - Zoom

Speaker: Navid Nabijou

Title: ?GV and GW invariants via the enhanced movable cone

4:00pm Workshop Moduli Journal Launch Celebration: Richard Wentworth - SCGP 102

Speaker: Richard Wentworth

Title: The algebraic and analytic compactifications of the Hitchin moduli space

5:00pm Summer Concert Series: Jazz Loft Originals - SCGP 103

Title: Summer Concert Series: Jazz Loft Originals

Abstract: Sextet to perform all original compositions, slated artists to include: Tom Manuel, worldrenowned Ray Anderson, trombone, John Marshall, tenor sax, Steve Salerno, guitar, Dan Pugach, drums, Dean Johnson, bass.

6:15pm Special Banquet Dinner: Moduli Journal Launch Celebration - SCGP Cafe

Title: Special Banquet Dinner: Moduli Journal Launch Celebration

Wednesday, July 10th

8:30am Workshop: Breakfast - SCGP Cafe

Title: Breakfast

9:30am Workshop Mini-course 1: Mohammed Abouzaid - SCGP 102

Speaker: Mohammed Abouzaid

Title: Moduli of A-branes

Abstract: Associated to each group are various spaces of representations. The simplest of these is the space of rank-1 representations, which is an algebraic torus of dimension equal to the rank of the first cohomology. Via the correspondence between representations of the fundamental group of a topological space and local systems on it, one thus associates to each space a variety which can be interpreted as a moduli space of objects in its category of local systems. When the topological space is itself a Lagrangian submanifold of a symplectic manifold, then under some topological hypotheses on the Lagrangian embedding, one can further interpret such representations as objects of the Fukaya category of the ambient symplectic manifold. This is the starting point of the approaches to mirror symmetry which combine the geometric SYZ conjecture and the categorical HMS conjecture to propose tautological explanation of the mirror phenomenon. The main goal of the lecture series will be to present the key ideas which allow one to go beyond the setting of embedded Lagrangians to produce constructions of moduli spaces of A-branes associated to immersed Lagrangians.

10:45am Workshop: Coffee Break - SCGP Cafe

Title: Coffee Break

11:30am Workshop Mini-course 2: Tamás Hausel - SCGP 102

Speaker: Tamás Hausel

Title: Mirror symmetry and big algebras

Abstract: After surveying some mirror symmetry phenomena in the geometry of Langlands dual Hitchin systems, we will model the Hitchin system on cominuscule upward flows by the equivariant cohomology of cominuscule flag varieties like the Grassmannian. Then we will explain how mirror symmetry implies a synthetic BNR correspondence. To generalise to the non-minuscule case we will construct a big commutative subalgebra of the Kirillov algebra to model the mirror of the universal principal bundle in an irreducible representation. We will discuss various aspects of big algebras such as their geometric interpretation in terms of equivariant cohomology of affine Schubert varieties, their symmetries, their anatomy, including their skeletons, multiplicity algebras, nerves and crystals. We will visualize some small examples related to baryon multiplet.

12:45pm Workshop: Lunch - SCGP Cafe

Title: Lunch

3:30pm Tea Break - SCGP Cafe

Thursday, July 11th

8:30am Workshop: Breakfast - SCGP Cafe

Title: Breakfast

9:30am Workshop Mini-course 2: Claire Voisin - SCGP 102

Speaker: Claire Voisin

Title: The smoothing problem for algebraic cycles

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Speaker: Laurent Fargues

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11:30am Workshop Mini-course 3: Tamás Hausel - SCGP, 102

Speaker: Tamás Hausel

Title: Mirror symmetry and big algebras

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