2023 Simons Math Summer Workshop - Week 3

Events for:
Monday, August 21st - Friday, August 25th

Monday, August 21st

8:30am Workshop: Breakfast - SCGP Cafe

Title: Breakfast

9:30am Workshop: Danilo Lewanski - SCGP 102

Speaker: Danilo Lewanski

Title: A spin on Hurwitz theory and Topological Recursion

Abstract: Hurwitz numbers enumerate branched coverings of Riemann surfaces and provide a rich sandbox of examples for enumerative geometry and neighbouring areas. Surprisingly, there is a formula that connects them to the intersection theory of the moduli spaces of stable curves: the ELSV formula. Furthermore, these numbers enjoy an integrability of type 2D-Toda, result that has been later employed in the GW/Hurwitz correspondence. The topological recursion is a procedure originally arising from random matrix models that takes as input a spectral curve — a Riemann surface with some extra data on it — and returns the solution of some enumerative geometric problem. In fact topological recursion is under certain constraints equivalent to the Givental-Teleman reconstruction for semisimple cohomological field theories presented in Zvonkine's course. A spin-off from the research on the mirror symmetry on Calaby-Yau 3-folds led to the generation of Hurwitz numbers via topological recursion. Over time this result has been generalised in different directions, including the Hurwitz count of Riemann surfaces with a spin structure, which are conjecturally determining Gromov-Witten invariants of surfaces with smooth canonical divisor.

10:45am Workshop: Coffee - SCGP Cafe

Title: Coffee

11:30am Workshop: Dimitri Zvonkine - SCGP 102

Speaker: Dimitri Zvonkine

Title: Teleman's classification of semisimple cohomological field theories and applications

1:00pm **Workshop: Lunch - SCGP 102**

Title: Lunch

3:30pm **Tea time - SCGP Cafe**

Title: Tea Time

Tuesday, August 22nd

8:30am **Workshop: Breakfast - SCGP Cafe**

Title: Breakfast

9:30am **Workshop: Danilo Lewanski - SCGP 102**

Speaker: Danilo Lewanski

Title: A spin on Hurwitz theory and Topological Recursion

Abstract: Hurwitz numbers enumerate branched coverings of Riemann surfaces and provide a rich sandbox of examples for enumerative geometry and neighbouring areas. Surprisingly, there is a formula that connects them to the intersection theory of the moduli spaces of stable curves: the ELSV formula. Furthermore, these numbers enjoy an integrability of type 2D-Toda, result that has been later employed in the GW/Hurwitz correspondence. The topological recursion is a procedure originally arising from random matrix models that takes as input a spectral curve — a Riemann surface with some extra data on it — and returns the solution of some enumerative geometric problem. In fact topological recursion is under certain constraints equivalent to the Givental-Teleman reconstruction for semisimple cohomological field theories presented in Zvonkine's course. A spin-off from the research on the mirror symmetry on Calaby-Yau 3-folds led to the generation of Hurwitz numbers via topological recursion. Over time this result has been generalised in different directions, including the Hurwitz count of Riemann surfaces with a spin structure, which are conjecturally determining Gromov-Witten invariants of surfaces with smooth canonical divisor.

10:45am **Workshop: Coffee - SCGP Cafe**

Title: Coffee

11:30am **Workshop: Dimitri Zvonkine - SCGP 102**

Speaker: Dimitri Zvonkine

Title: Teleman's classification of semisimple cohomological field theories and applications

1:00pm   **Workshop: Lunch - SCGP 102**

 Title: Lunch

4:00pm   **Workshop and Public Tea - Lobby**

 Title: Public Tea

5:00pm   **- SCGP 103**

 Title: Summer Concert Series - Leon Livshin Concert -Unraveling Ravel

Wednesday, August 23rd

8:30am   **Workshop: Breakfast - SCGP Cafe**

 Title: Breakfast

9:30am   **Workshop: Danilo Lewanski - SCGP 102**

 Speaker: Danilo Lewanski

 Title: A spin on Hurwitz theory and Topological Recursion

 Abstract: Hurwitz numbers enumerate branched coverings of Riemann surfaces and provide a rich sandbox of examples for enumerative geometry and neighbouring areas. Surprisingly, there is a formula that connects them to the intersection theory of the moduli spaces of stable curves: the ELSV formula. Furthermore, these numbers enjoy an integrability of type 2D-Toda, result that has been later employed in the GW/Hurwitz correspondence. The topological recursion is a procedure originally arising from random matrix models that takes as input a spectral curve — a Riemann surface with some extra data on it — and returns the solution of some enumerative geometric problem. In fact topological recursion is under certain constraints equivalent to the Givental-Teleman reconstruction for semisimple cohomological field theories presented in Zvonkine's course. A spin-off from the research on the mirror symmetry on Calaby-Yau 3-folds led to the generation of Hurwitz numbers via topological recursion. Over time this result has been generalised in different directions, including the Hurwitz count of Riemann surfaces with a spin structure, which are conjecturally determining Gromov-Witten invariants of surfaces with smooth canonical divisor.

10:45am **Workshop: Coffee - SCGP Cafe**

 Title: Coffee

12:00pm **Workshop: Lunch - SCGP Cafe**

Title: Lunch

1:00pm   **- Sunken Meadow State Park, New York State Reference Rte 908K, Kings Park, NY 11754, USA**

Title: Beach Outing: Sunken Meadow Beach - 1-5PM

Thursday, August 24th

8:30am   **Workshop: Breakfast - SCGP Cafe**

Title: Breakfast

9:30am   **Workshop: Dimitri Zvonkine - SCGP 102**

Speaker: Dimitri Zvonkine

Title: Teleman's classification of semisimple cohomological field theories and applications

10:45am **Workshop: Coffee - SCGP Cafe**

Title: Coffee

11:30am **Workshop: Danilo Lewanski - SCGP 102**

Speaker: Danilo Lewanski

Title: A spin on Hurwitz theory and Topological Recursion

Abstract: Hurwitz numbers enumerate branched coverings of Riemann surfaces and provide a rich sandbox of examples for enumerative geometry and neighbouring areas. Surprisingly, there is a formula that connects them to the intersection theory of the moduli spaces of stable curves: the ELSV formula. Furthermore, these numbers enjoy an integrability of type 2D-Toda, result that has been later employed in the GW/Hurwitz correspondence. The topological recursion is a procedure originally arising from random matrix models that takes as input a spectral curve — a Riemann surface with some extra data on it — and returns the solution of some enumerative geometric problem. In fact topological recursion is under certain constraints equivalent to the Givental-Teleman reconstruction for semisimple cohomological field theories presented in Zvonkine's course. A spin-off from the research on the mirror symmetry on Calaby-Yau 3-folds led to the generation of Hurwitz numbers via topological recursion. Over time this result has been generalised in different directions, including the Hurwitz count of Riemann surfaces with a spin structure, which are conjecturally determining Gromov-Witten invariants of surfaces with smooth canonical divisor.

1:00pm **Workshop: Lunch - SCGP 102**

Title: Lunch

3:30pm **Tea time - SCGP Cafe**

Title: Tea Time

6:00pm **Workshop Banquet - Simons Center Cafe**

Title: Workshop Banquet

Friday, August 25th

8:30am **Workshop: Breakfast - SCGP Cafe**

Title: Breakfast

9:30am **Workshop: Dimitri Zvonkine - SCGP 102**

Speaker: Dimitri Zvonkine

Title: Teleman's classification of semisimple cohomological field theories and applications

10:45am **Workshop: Coffee - SCGP Cafe**

Title: Coffee

1:00pm **Workshop: Lunch - SCGP 102**

Title: Lunch

3:30pm **Tea time - SCGP Cafe**

Title: Tea Time