
Group 1 :

Standard Young tableaux with bounded height

- Speaker : Jang Soo Kim (AORC Group 1)
 - Abstract : The Robinson-Schensted algorithm is a well-known bijection between permutations and pairs of standard Young tableaux of same shapes. It also induces a bijection between involutions and standard Young tableaux. Using a property of this algorithm one can show that the number of standard Young tableaux with bounded height h is equal to the number of involutions with no h -crossings. We generalize this fact as follows: the number of standard Young tableaux with bounded height h and h -relative width w is equal to the number of involutions with no h -crossings and no w -nestings. This is joint work with Christian Krattenthaler, JiSun Huh, and Soich Okada.
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AORC Monthly Seminar

Sep. 24 (Fri), 2021 @ AORC (Online)

AORC Monthly Seminar

- Object : Active collaboration within and between groups, fitting the aim of SRC
- Plan : Newly-joined researchers take pivotal roles.
- Operations Committee :
 - Nhan Phu Chung (Committee Chair, Principal professor)
 - Bumtlee Kang (Group 1), Juyoung Jeong (Group 2), Myunghyun Jung (Group 3)

Program

- 2:00 - 2:50 pm : Jihyun Hwang (AORC Group 3) & discussion
- 3:00 - 3:50 pm : Cheolwon Heo (AORC Group 2) & discussion
- 4:00 - 4:50 pm : Jang Soo Kim (AORC Group 1) & discussion

Abstracts

Group 3 :

Weakly holomorphic Hecke eigenforms

- Speaker : Jihyun Hwang (AORC Group 3)
- Abstract : It is well-known that the space of holomorphic cusp forms has a basis consisting of eigenforms for the Hecke operators. It does not hold for the space of weakly holomorphic modular forms, but if we give an appropriate equivalence relation on the space, we can find Hecke eigenforms. In this talk, we will show how to find a basis consisting of weakly holomorphic Hecke eigenforms for some congruence subgroups of which the genera are zero or one. Further, we will see the relations between such eigenforms and Poincare series.

Group 2 :

Isomorphism problem for even-cycle matroids

- Speaker : Cheolwon Heo (AORC Group 2)
- Abstract : A signed graph is a pair (G, Σ) where G is a graph and Σ is a subset of edges of G . We say that a cycle C of G is even in (G, Σ) if $|C \cap \Sigma|$ is even; otherwise, C is odd. A matroid M is an even-cycle matroid if there exists a signed graph (G, Σ) such that the circuits of M precisely correspond to the even cycles or the unions of two odd cycles sharing at most one vertex. Isomorphism problem for even-cycle matroids is the problem of characterizing two signed graphs (G_1, Σ_1) and (G_2, Σ_2) representing the same even-cycle matroids. In this talk, I will give the structures for solving this problem when G_1 and G_2 are 4-connected. This is joint work with Bertrand Guenin and Irene Pivotto.