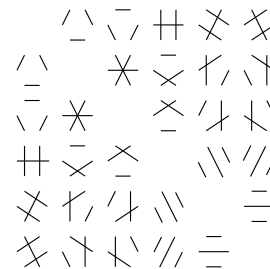


# Mathematics Seminar



## Rocky Mountain Algebraic Combinatorics Seminar

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### A raising operator formula for $\nabla$ on an LLT polynomial

Jonah Blasiak  
Drexel U.

The symmetric function operator  $\nabla$  arose in the theory of Macdonald polynomials and its action on various bases has been the subject of numerous conjectures over the last two decades. It developed that  $\nabla$  is but a shadow of a more complete picture involving the elliptic Hall algebra of Burban and Schiffmann. This algebra is generated by subalgebras  $\Lambda(X^{m,n})$  isomorphic to the ring of symmetric functions, one for each coprime pair of integers  $(m, n)$ . We identify certain combinatorially defined rational functions which correspond to LLT polynomials in any of the subalgebras  $\Lambda(X^{m,n})$ . As a corollary, we deduce an explicit raising operator formula for  $\nabla$  on any LLT polynomial. This is joint work with Mark Haiman, Jennifer Morse, Anna Pun, and George Seelinger.

Online via Zoom

<https://zoom.us/j/95321487441?pwd=Tlp4VG9pejZCekJmeDFFb1BzeWpsdz09>, Meeting ID: 953 2148 7441, Passcode: 722523

4 pm, Friday, April 23, 2021

Talk part 1, 4.10-4.40,

Break 4.40-5.10 at <https://gather.town/HQmdvgyabpEL4qpB/RMAC>,

Talk part 2 5:10-5:40

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This is a joint Denver U / UC Boulder / UC Denver / U of Wyoming / CSU seminar that meets biweekly.  
Anyone interested is welcome to join us at a local restaurant for dinner after the talks.



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