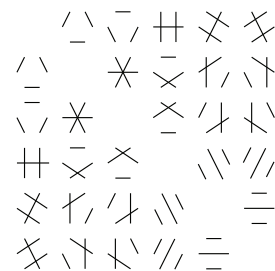


# Mathematics Seminar



## Rocky Mountain Algebraic Combinatorics Seminar

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### Young tableaux in branching rules of winding subalgebras and relations with its variations

Khanh Nguyen  
U. Magdeburg, Germany

We give a new interpretation of the shifted Littlewood-Richardson coefficients  $f_{\lambda\mu}^v$  ( $\lambda, \mu, v$  are strict partitions). The coefficients  $g_{\lambda\mu}$  which appear in the decomposition of Schur  $Q$ -function  $Q_\lambda$  into the sum of Schur functions  $Q_\lambda = 2^{l(\lambda)} \sum_{\mu} g_{\lambda\mu} s_\mu$  can be considered as a special case of  $f_{\lambda\mu}^v$  (here  $\lambda$  is a strict partition of length  $l(\lambda)$ ). We also give another description for  $g_{\lambda\mu}$  as the cardinal of a subset of a set that counts Littlewood-Richardson coefficients  $c_{\mu'\mu}^{\tilde{\lambda}}$ . This new point of view allows us to establish connections between  $g_{\lambda\mu}$  and  $c_{\mu'\mu}^{\tilde{\lambda}}$ . More precisely, we prove that  $g_{\lambda\mu} = g_{\lambda\mu'}$ , and  $g_{\lambda\mu} \leq c_{\mu'\mu}^{\tilde{\lambda}}$ . We conjecture that  $g_{\lambda\mu}^2 \leq c_{\mu'\mu}^{\tilde{\lambda}}$  and formulate some conjectures on our combinatorial models which would imply this inequality if it is valid. We present an approach using Fomin diagrams and Viennot's geometric construction for RSK correspondence to attack the conjecture.

Weber 223

4–6 pm, Friday, Oct 15, 2021

(Refreshments 3:30–4 pm)

Colorado State University

Online via Zoom

<https://zoom.us/j/95321487441?pwd=Tlp4VG9pejZCekJmeDFFb1BzeWpsdz09>, Meeting ID: 953 2148 7441, Passcode: 722523  
4 pm, Friday, Oct 15, 2021

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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.



Department of Mathematics  
Fort Collins, Colorado 80523