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A new shifted Littlewood-Richardson rule

As Littlewood-Richardson rules compute linear representation theory of symmetric groups, shifted Littlewood-Richardson rules compute analogous projective representation theory of symmetric groups. The first shifted Littlewood-Richardson rule is due to Stembridge (1989), building on a natural generalization by Sagan and Worley (1979/1984) of the jeu de taquin algorithm to shifted Young tableaux. We give a new shifted Littlewood-Richardson rule that requires consideration of fewer tableaux than Stembridge's rule and is provably faster on a family of structure coefficients. Our rule derives from applying old ideas of Lascoux and Schützenberger (1981) to the study of Haiman's mixed insertion (1989) and Serrano's shifted plactic monoid (2010).(Joint work with Oliver Pechenik.)