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Littlewood-Richardson rules for symmetric skew quasisymmetric Schur functions

Symmetric skew quasisymmetric Schur functions are a generalization of skew Schur functions and contain skew Schur functions as a special case. One way of expanding skew Schur functions in terms of Schur functions is to use the famed version of the classical Littlewood-Richardson rule involving Yamanouchi words. This given, a natural question to consider is whether there exists an analogous rule for symmetric skew quasisymmetric Schur functions.

In this talk we will give two Littlewood-Richardson rules for symmetric skew quasisymmetric Schur functions that are analogous to the aforementioned version of the classical Littlewood-Richardson rule. Furthermore, both our rules have the nice property that they contain the classical version as a special case. We will then apply our rules to classify symmetric skew quasisymmetric Schur functions diagrammatically. This talk is based on joint work with Christine Bessenrodt and Vasu Tewari.