1086-05-682 **Heather Dye** and **Patricia Hersh*** (`plhersh@ncsu.edu`), Patricia Hersh, Box 8205, North Carolina State University, Raleigh, NC 27695-8205, and **Karola Meszaros** and **Bridget Tenner**. *Homotopy type of a noncommutative analogue for Young's lattice.*

Bessenrodt, Haglund, Luoto, Mason and van Willigenburg recently introduced quasisymmetric and noncommutative analogues of Schur functions. Associated to these are analogues of Young's lattice whose covering relations record the ways one may multiply by a single box in the appropriate new Pieri Rule. We obtain results on the homotopy type of these posets, in spite of these posets not being Cohen-Macaulay posets, motivated by the observation that the Möbius function appeared to be 0, 1 or -1 on each poset interval. To this end, we developed a new general procedure for transforming a poset edge labeling into a more convenient chain labeling; in our case this led to very well behaved discrete Morse functions, building upon the machinery developed by Babson and Hersh for constructing discrete Morse functions from lexicographic orders. (Received September 11, 2012)