

1056-05-1361

Sarah K Mason* (sarahkmason@gmail.com), San Diego, CA , and **Aaron Lauve**. *A basis for the coinvariant space for quasisymmetric polynomials*. Preliminary report.

The coinvariant space for quasisymmetric polynomials is the quotient ring of quasisymmetric functions by symmetric functions. Garsia and Wallach used an algorithmic approach to prove that this ring has dimension $n!$, where n is the number of variables. In this joint work with Lauve, we affirm that the basis conjectured by Bergeron and Reutenauer is indeed a basis for this quotient ring, providing the first constructive proof of the Garsia-Wallach result. Our proof utilizes recent results (joint with Haglund, Luoto, and van Willigenburg) on the multiplication of quasisymmetric functions. (Received September 21, 2009)