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Rosa C Orellana* (rosa.c.orellana@dartmouth.edu), 6188 Kemeny Hall, Hanover, NH 03755, and **Mike Zabrocki** (zabrocki@mathstat.yorku.ca), Department of Mathematics and Statistics, York University, Toronto, Ontario M3J 1P3, Canada. *A Multiset Partition Algebra*.

Classical Howe duality provides a representation theoretical framework for classical invariant theory. In the classical Howe duality, the general linear group, $GL_n(\mathbb{C})$, is dual to $GL_k(\mathbb{C})$ when acting on the polynomial ring in the variables $x_{i,j}$ where $1 \leq i \leq n$ and $1 \leq j \leq k$. In this talk, I will introduce a multiset partition algebra, $MP_k(n)$, as the Howe dual to the action of the symmetric group, S_n , on the polynomial ring.

This is joint work with Mike Zabrocki (Received March 07, 2021)