**Abstract:**

We conjecture two combinatorial interpretations for a symmetric function arising from an eigenoperator on the Macdonald polynomials called the delta operator. Both interpretations generalize the famous Shuffle Conjecture, which connects these eigenoperators to parking functions. We prove several cases of these new conjectures using objects such as ordered set partitions, rook placements, Tesler matrices, and LLT polynomials. In particular, we obtain an extension of MacMahon’s classical equidistribution theorem from permutations to ordered set partitions, which was described in the speaker’s advancement to candidacy.

**Advisor:** Jeff Remmel

**Wednesday, May 27, 2015**

9:00 AM
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