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David J. Hemmer* (djemmer@mtu.edu), Michigan Technological University, 1400 Townsend Drive, Houghton, MI 49931. *Generating functions for fixed points of the Mullineux map.*

Mullineux defined an involutory bijection on the set of e -regular partitions of n . When e is prime, these partitions label irreducible symmetric group modules in characteristic e . Mullineux conjectured (since proven) that this “Mullineux map” described the effect on these labels of taking the tensor product with the one-dimensional signature representation. Counting irreducible S_n modules preserved under this tensor product (i.e. fixed points of the Mullineux map) is related to counting irreducible modules for the alternating group A_n . In 1991, Andrews and Olsson worked out the generating function of these fixed points when e is prime, as evidence in support of the conjecture. We generalize their work to arbitrary e , and discover distinct answers depending on the parity of e . (Received July 30, 2019)