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Matthew Hyatt* (m.hyatt@math.miami.edu). *Eulerian quasisymmetric functions for the type B Coxeter group and other wreath product groups.*

Eulerian quasisymmetric functions were introduced by Shareshian and Wachs in order to obtain a q -analog, involving the permutation statistics major index and excedance number, of Euler's exponential generating function formula for the Eulerian polynomials. Applying the stable and nonstable principal specializations yields formulas for joint distributions of permutation statistics. We consider the wreath product of the cyclic group with the symmetric group, also known as the group of multicolored permutations. We use this group to introduce *multicolored Eulerian quasisymmetric functions*, which are a generalization of Eulerian quasisymmetric functions. We derive a formula for the generating function of these multicolored Eulerian quasisymmetric functions, which reduces to a formula of Shareshian and Wachs for the Eulerian quasisymmetric functions. We show that applying specializations yields formulas for joint distributions of multicolored permutation statistics of Adin, Brenti and Roichman and Foata and Han, which generalize Shareshian and Wachs' q -analog of Euler's formula. (Received September 13, 2010)