1086-05-2803   **Matthew Moynihan*** (`mmoynihan@wooster.edu`), Department of Mathematics, The College of Wooster, 1189 Beall Avenue, Wooster, OH 44691. *The Colored Eulerian Descent Algebra.*

Mantaci and Reutenauer first proved the existence of an algebra whose basis elements are formal sums of colored permutations with the same associated colored compositions (an extension of the descent set). Using Steingrímsson's definition of colored permutation descents, we describe a colored Eulerian descent algebra, which is a subalgebra of the Mantaci-Reutenauer algebra. We also describe a set of orthogonal idempotents which spans this colored Eulerian descent algebra. They include, as a special case, the familiar Eulerian idempotents found in the group algebra of the symmetric group. (Received September 25, 2012)