1056-05-1607 **John Shareshian\*** (`shareshi@math.wustl.edu`) and **Michelle L Wachs** (`wachs@math.miami.edu`). *Eulerian quasisymmetric functions.*

Given a permutation $w \in S_n$ written in one line notation, place a bar over each excedance in $w$ to obtain $\bar{w}$. Order the alphabet of barred and unbarred symbols by

$$\bar{1} < \ldots < \bar{n} < 1 < \ldots < n.$$

Define $DEX(w)$ to be the descent set of $\bar{w}$ with respect to the given ordering, and let $F_w$ be the fundamental quasisymmetric function associated to $DEX(w)$. It turns out that for certain subsets $X$ of $S_n$, the sum of $F_w$ over $X$ is a symmetric function. Such sums, which we call Eulerian quasisymmetric functions, have turned out to be useful in the examination of permutation statistics. I will discuss recent work in our ongoing study of Eulerian quasisymmetric functions. (Received September 22, 2009)