1052-05-182   **Saúl A. Blanco*** (`sabr@math.cornell.edu`), Department of Mathematics, Cornell University, Ithaca, NY 14853. *The shortest path poset of a finite Coxeter group.*

We define a ranked poset using the shortest paths in the Bruhat graph of a finite Coxeter group W from the identity to the longest word of W, w_0. We show that this poset is the union of Boolean posets of rank absolute length of w_0, $\ell_T(w_0)$. That is, any set of reflections $\{t_1, \ldots, t_{\ell_T(w_0)}\}$ so that $t_1 \cdots t_{\ell_T(w_0)} = w_0$ is fully commutative and describes a path in the Bruhat graph from e to w_0. This allows us to give a combinatorial interpretation of the lowest-degree terms in the complete **cd**-index of W. (Received August 27, 2009)