1139-13-607 **Victor Reiner** and **Anne V. Shepler*** (`ashepler@unt.edu`). *Invariant derivations and differential forms for reflection groups.*

Classical invariant theory of reflection groups operates from a straightforward maxim: The invariants of a set should exhibit the same algebraic structure as the original set. For example, a 1963 theorem of Louis Solomon exhibits the space of invariant differential forms as an exterior algebra in its own right. We use tools of Gutkin and Opdam on characters to extend Solomon's Theorem to mixed differential derivations. This work resolves some combinatorial conjectures motivated by W-Catalan combinatorics and correlates with Lie-theoretic conjectures and results of Bazlov, Broer, Joseph, Reeder, and Stembridge, and also Deconcini, Papi, and Procesi. (Received February 20, 2018)