1158-05-59 **Joshua P Swanson*** (jswanson@ucsd.edu) and **Nolan R Wallach**. *Harmonic differential forms for pseudo-reflection groups.*

A great deal of research activity in algebraic combinatorics concerns diagonal actions of the symmetric group $\mathfrak{S}_n$ on k sets of n commuting indeterminants and ℓ sets of n anti-commuting indeterminants. The *coinvariant ideal* is the ideal generated by non-constant homogeneous $\mathfrak{S}_n$-invariants, and the *coinvariant algebra* is the corresponding quotient. When $k = 1, \ell = 0$, Chevalley famously determined the Hilbert series of the coinvariant algebra. When $k = 2, \ell = 0$, Haiman determined the bigraded Hilbert series using deep results of algebraic geometry. A recent conjecture of Zabrocki relates the $k = 2, \ell = 1$ coinvariant algebra to the Delta Conjecture of Haglund–Remmel–Wilson. We present progress towards Zabrocki's conjecture focusing on the $k = 1, \ell = 1$ specialization and generalizations to pseudo-reflection groups. In particular, we construct bases of semi-invariants and derive certain vanishing bounds in agreement with Zabrocki's conjecture. (Received February 18, 2020)