

Title: Diagonal invariants for dihedral groups

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Abstract: For a finite group acting on multivariate polynomials, the quotient of the Hilbert series for the diagonal invariants and for the tensor invariants is a polynomial. (Hochster and Eagon).

This polynomial was described explicitly, by various authors, for the classical Weyl groups (types A, B, D). We describe the quotient polynomial explicitly for type $I_2(m)$ (the dihedral groups), using a suitable flag major index, and conjecture a corresponding explicit bases for the diagonal invariants.