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Co-quasi-invariant spaces for finite complex reflection groups

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We study, in a global uniform manner, the quotient of the ring of polynomials in l sets of n variables, by the ideal generated by diagonal quasi-invariant polynomials for general permutation groups $W=G(r,n)$. We show that, for each such group W , there is an explicit universal symmetric function that gives the N^l -graded Hilbert series for these spaces. This function is universal in that its dependance on l only involves the number of variables it is calculated with. We also discuss the combinatorial implications of the observed fact that it affords an expansion as a positive coefficient polynomial in the complete homogeneous symmetric functions.

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