Gaiffi, Giovanni
Exponential formulas for models of complex reflection groups. (English) [Zbl 1333.05319]

Summary: In this paper we find exponential formulas for the Betti numbers of the De Concini-Procesi minimal wonderful models $Y_{G(r,p,n)}$ associated to the complex reflection groups $G(r,p,n)$. Our formulas are different from the ones already known in the literature: they are obtained by a new combinatorial encoding of the elements of a basis of the cohomology by means of set partitions with weights and exponents.

We also point out that a similar combinatorial encoding can be used to describe the faces of the real spherical wonderful models of type $A_{n-1} (= G(1,1,n))$, $B_n (= G(2,1,n))$ and $D_n (= G(2,2,n))$. This provides exponential formulas for the $f$-vectors of the associated nestohedra: the Stasheff’s associahedra (in this case closed formulas are well known) and the graph associahedra of type $D_n$.

MSC:
05E18 Group actions on combinatorial structures
05B35 Combinatorial aspects of matroids and geometric lattices
52C35 Arrangements of points, flats, hyperplanes (aspects of discrete geometry)
52B05 Combinatorial properties of polytopes and polyhedra (number of faces, shortest paths, etc.)

Keywords: oriented matroid; tropical variety; linear ideal; Coxeter arrangement; graph associahedron; nested set complex; reorientations; Moebius function

Full Text: DOI arXiv

References:

© 2022 FIZ Karlsruhe GmbH

This reference list is based on information provided by the publisher or from digital mathematics libraries. Its items are heuristically matched to zbMATH identifiers and may contain data conversion errors. It attempts to reflect the references listed in the original paper as accurately as possible without claiming the completeness or perfect precision of the matching.