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$\kappa$-Lefschetz properties, sectional matrices and hyperplane arrangements. (English)

Zbl 1476.14021

In the paper under review, the authors study the Lefschetz properties for non-Artinian algebras. The main tool that the authors are using is the so-called sectional matrix which encodes the Hilbert function of successive hyperplane sections of a homogeneous ideal. In the first step, the authors explain why the sectional matrix of a graded algebra plays an important role in the study of Lefschetz properties. As a result, the authors apply results devoted to the sectional matrix to study the Jacobian algebra of a hyperplane arrangement with a special emphasize of free arrangements.

Reviewer: Piotr Pokora (Kraków)

MSC:
14C20 Divisors, linear systems, invertible sheaves
13A02 Graded rings
13D40 Hilbert-Samuel and Hilbert-Kunz functions; Poincaré series
05C22 Signed and weighted graphs
13P10 Gröbner bases; other bases for ideals and modules (e.g., Janet and border bases)
32S22 Relations with arrangements of hyperplanes
52C35 Arrangements of points, flats, hyperplanes (aspects of discrete geometry)

Keywords:
hyperplane arrangements; Lefschetz properties; sectional matrices; almost revlex ideals

Full Text: DOI arXiv

References:


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