

KOSZUL ALGEBRAS ARISING FROM HYPERPLANE ARRANGEMENTS

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The Orlik-Terao algebra is generated by the reciprocals of the defining functionals of a hyperplane arrangement. This is a weighted commutative analog of the cohomology algebra of a complex hyperplane arrangement complement. An augmented graded commutative algebra is Koszul if the Castelnuovo-Mumford regularity of the trivial module is zero. We show that the Orlik-Terao algebra is Koszul when the arrangement is filtered in an appropriate sense. As a refinement of the above result, we give a characterization of complete intersection Orlik-Terao algebras. This is a joint work with Graham Denham and Stefan Tohaneanu.

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