

Lefschetz properties of the Artinian Orlik-Terao algebra

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Some 30 years ago, Peter Orlik and Hiro Terao introduced a commutative analog of the Orlik-Solomon (OS) algebra. The OS algebra is the cohomology ring of a hyperplane arrangement complement, and is a quotient of an exterior algebra by a combinatorially determined ideal. The Orlik-Terao (OT) algebra and Artinian version (AOT) have subsequently been studied by many authors (sometimes under the guise as the “algebra of reciprocal forms”). It has surprising connections to classical algebraic geometry (for example, to certain blowups of projective space). We analyze Lefschetz properties of the Artinian Orlik-Terao algebra.