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THE VANISHING OF THE COHOMOLOGY OF THE ORLIK-SOLOMON ALGEBRAS

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Abstract. The Orlik-Solomon algebra of a hyperplane arrangement first appeared from the Brieskorn and Orlik-Solomon theorems as the cohomology of the complement of this arrangement (if the ground field is complex). Later, it was discovered that this algebra plays an important role in many other problems. In particular, define the cohomology of an Orlik-Solomon algebra as that of the complex formed by its homogeneous components with the differential defined via multiplication by an element of degree one. In this paper, we give necessary and sufficient conditions for the vanishing of the cohomology of the Orlik-Solomon algebra.

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