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Tameness of local cohomology of monomial ideals with respect to monomial prime ideals

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Abstract

We give an explicit combinatorial formula for the Hilbert series of local cohomology modules of a quotient R of a polynomial ring by a monomial ideal with respect to a monomial prime ideal. A formula for the dimension of the bigraded components of the local cohomology modules are deduced from this result. By using this formula we observe that all these local cohomology modules are always tame.