

**Kreuzer, Martin**

**Some applications of the canonical module of a 0-dimensional scheme.** (English)

Zbl 0826.14031

Orecchia, Ferruccio (ed.) et al., Zero-dimensional schemes. Proceedings of the international conference held in Ravello, Italy, June 8-13, 1992. Berlin: de Gruyter. 243-252 (1994).

The author [in: Can. J. Math. 46, No. 2, 357-379 (1994; see the preceding review)] defined several kinds of uniformities for a 0-dimensional subscheme  $Z$  of  $\mathbb{P}^d$  generalizing the classical Cayley-Bacharach property of general hyperplane sections of an integral curve of  $\mathbb{P}^{d+1}$  (in characteristic 0). Here, as well in the author's joint paper with *L. Robbiano*, "On maximal Cayley-Bacharach schemes" [Commun. Algebra 23, No. 9, 3357-3378 (1995)] and the references quoted there the author studies  $Z$  with algebraic tools (local duality and the canonical module). His results are applied here also to the study of combinatorial properties ("purity", "flawless") of the Hilbert function of  $Z$ .

For the entire collection see [Zbl 0797.00007].

Reviewer: [E.Ballico \(Povo\)](#)

**MSC:**

[14M05](#) Varieties defined by ring conditions (factorial, Cohen-Macaulay, semi-normal)

[14N05](#) Projective techniques in algebraic geometry

[14H50](#) Plane and space curves

[14C17](#) Intersection theory, characteristic classes, intersection multiplicities in algebraic geometry

Cited in **2** Reviews  
Cited in **4** Documents

**Keywords:**

0-dimensional subscheme; hyperplane sections; Cayley-Bacharach schemes