

THE EQUALITY OF ELIAS-VALLA AND  
THE ASSOCCATED GRADED RINGS OF MAXIMAL IDEAL

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ABSTRACT. Let  $(A, \mathfrak{m})$  be a Noetherian local ring with  $d = \dim A > 0$  and  $Q$  be a parameter ideal in  $A$  which forms a reduction of maximal ideal  $\mathfrak{m}$  of  $A$ . Then the Buchsbaumness of the associated graded ring of  $\mathfrak{m}$  in a Buchsbaum local ring  $A$  satisfying the equality  $2e_0(\mathfrak{m}) - e_1(\mathfrak{m}) + e_1(Q) = v(A) - d + 2$  of Elias and Valla is given, where  $e_0(\mathfrak{m})$ ,  $e_1(\mathfrak{m})$ , and  $e_1(Q)$  denote the Hilbert coefficients of  $\mathfrak{m}$  and  $Q$ ,  $v(A)$  the embedding dimension of  $A$ , respectively. Hence a conjecture raised by A. Corso [1] is settled affirmatively.

REFERENCES

- [1] A. Corso, *Sally modules of  $\mathfrak{m}$ -primary ideals in local rings*, Comm. Algebra, **37** (2009) 4503–4515.

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