

UNIFORM BOUNDS FOR HILBERT COEFFICIENTS  
OF PARAMETERS

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ABSTRACT. Let  $A$  be a Noetherian local ring with  $d = \dim A > 0$ . This paper shows that the Hilbert coefficients  $\{e_Q^i(A)\}_{1 \leq i \leq d}$  of parameter ideals  $Q$  have uniform bounds if and only if  $A$  is a generalized Cohen-Macaulay ring. The uniform bounds are huge; the sharp bound for  $e_Q^2(A)$  in the case where  $A$  is a generalized Cohen-Macaulay ring with  $\dim A \geq 3$  is given.

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