

**COHEN–MACAULAYNESS VERSUS THE VANISHING OF THE FIRST
HILBERT COEFFICIENT OF PARAMETER IDEALS**

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ABSTRACT. The conjecture of Wolmer Vasconcelos on the vanishing of the first Hilbert coefficient $e_1(Q)$ is solved affirmatively, where Q is a parameter ideal in a Noetherian local ring. Basic properties of the rings for which $e_1(Q)$ vanishes are derived. The invariance of $e_1(Q)$ for parameter ideals Q and its relationship to Buchsbaum rings are studied.