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Jason M Lutz* (jlutz3@math.unl.edu). *Homological characterizations of quasi-complete intersections.*

Let R be a commutative Noetherian ring and I an ideal of R . The homology of a Koszul complex on a generating set of I is an invariant of I , and if this homology algebra has the structure of an exterior algebra on $H_1(K)$, then I is said to be a quasi-complete intersection (q.c.i.) ideal. Using Tate's "adjunction of variables" to annihilate the degree 1 homology of K , we obtain a two-step Tate complex. A result of Blanco, Majadas, and Rodicio yields that I is a q.c.i. ideal if and only if this infinite complex is acyclic. Our main results characterize quasi-complete intersection ideals as those ideals for which the homology of a two-step Tate complex vanishes in a finite band of sufficient size. (Received January 18, 2016)