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Homological invariants of modules over contracting endomorphisms.

A celebrated result of Kunz states that if a local ring R of characteristic p is flat as module over itself via (some iterate of) the Frobenius endomorphism, then R must be regular. Recently, Avramov, Hochster, Yao, and I discovered that in fact the same conclusion holds even if there exists *some* non-zero finitely generated R -module M that has finite flat dimension as a module via an iterate of the Frobenius endomorphism. I will discuss this and related results. (Received August 25, 2011)