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Directed families of big Cohen-Macaulay algebras in equal characteristic

A big Cohen-Macaulay algebra over a local ring R is an algebra B such that every system of parameters on R is a regular sequence on B . Previously, Geoffrey Dietz proved that big Cohen-Macaulay algebras in characteristic $p > 0$ form a directed family. In joint work with Geoffrey Dietz, we extend these results to the equal characteristic 0 case using work of Schoutens on reduction to characteristic p via ultraproducts. This work has applications to the use of closure operations to study singularities.