Homological Properties of Connected Graded Algebras

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Connected graded algebras naturally arise as singular cohomology rings of path connected topological spaces. On the other hand, it is classical that there have been many interactions between rational homotopy theory and theory of commutative local rings. In this survey talk, I will present some analogies between homological properties of connected graded algebras and those of commutative local rings. Many of these studies have been motivated by noncommutative algebraic geometry.