



On the algebraic K-theory of truncated polynomial algebras in several variables

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We consider the algebraic K-theory of a truncated polynomial algebra in several commuting variables, $K(k[x_1, \dots, x_n]/(x_1^{a_1}, \dots, x_n^{a_n}))$. This naturally leads to a new generalization of the big Witt vectors. If k is a perfect field of positive characteristic we describe the K-theory computation in terms of a cube of these Witt vectors on N^n . If the characteristic of k does not divide any of the a_i we compute the K-groups explicitly. We also compute the K-groups modulo torsion for $k=\mathbb{Z}$. To understand this K-theory spectrum we use the cyclotomic trace map to topological cyclic homology, and write $TC(k[x_1, \dots, x_n]/(x_1^{a_1}, \dots, x_n^{a_n}))$ as the iterated homotopy cofiber of an n -cube of spectra, each of which is easier to understand.

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