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Nilpotence and descent in algebraic K-theory

Abstract: I will detail recent progress by Clausen, Mathew, Naumann and myself on the conjectures of Ausoni and Rognes, which were inspired by Thomason's seminal work on descent in algebraic K-theory and the now proven Quillen-Lichtenbaum conjecture. More specifically, we demonstrate a relationship between nilpotence, descent, and some vanishing results in algebraic K-theory. As a consequence, we are able to establish the conjectured version of $T(n)$-local G Galois-descent for G a p-group. Moreover, we establish the expected result that if A is a commutative algebra whose chromatic complexity is at most n ($T(n+i)A = 0$ for all $i > 0$), then $K(A)$ has chromatic complexity at most $n+1$.