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Section:

2. Algebra

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Filtrations on Higher Algebraic K-theory

Using the theory of simplicial sheaves one can define a lambda-ring structure on higher K-groups of simplicial schemes hence a gamma-filtration F^p_γ of these groups. There exist also the filtration coming from the Brown-Gersten spectral sequence (the algebraic analog of the Atiyah-Hirzebruch spectral sequence) and, in the case of a variety X over a field, the filtration F^p_{codim} by codimension of supports. We compare these filtrations and we get in particular the inclusion

$$F^p_\gamma K_m(X) \in F^{p-m}_{codim} K_m(X).$$

This is joint work with H. Gillet.

Reference: H. Gillet and C. Soulé, Filtrations on Higher Algebraic K-theory, preprint (1984, revised in 1998).