

# Delooping algebraic K-theory via infinite dimensional vector bundles of locally compact type

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2016 年 8 月 29 日 ・ 30 日

空間の代数的・幾何的モデルとその周辺

For a finite dimensional vector bundle over a scheme, there are two distinguished cohomology classes defined by its rank and determinant line bundle. There are no sensible notions of rank and determinant that apply to infinite dimensional vector bundles, but Drinfeld introduced a class of infinite dimensional bundles of locally compact type for which certain analogous distinguished cohomology classes are defined. In comparison with the finite dimensional case, these bundles have interesting differences in: the topology to use to glue local trivial models to global ones; and the degrees of the cohomology groups that the analogous cohomology classes live in. In these talks I will make precise and enhance this comparison picture from a K-theoretical perspective, by showing that Drinfeld's class of vector bundles deloops the K-theory spectrum and formulating its geometric consequences in the framework of infinity-topos theory. The first talk will be devoted to a brief explanation of Drinfeld's theory on his class of infinite dimensional vector bundles of locally compact type, and in the second talk I will show the precise K-theoretical picture comparing the similarities and differences between the finite dimensional vector bundles and Drinfeld's ones.