



The excess formula in functorial form

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This article is motivated by the need for better understanding of refined Riemann-Roch theorems and the behavior of the determinant of the cohomology. This poses a certain problem of functoriality and can be understood as that of giving refined constructions of operations in algebraic K-theory. In this article this is specialized to mean refining the excess formula, which measures the failure of base change, to the level of Deligne's virtual category. We give a natural set of properties for such a refinement, and prove that there exists a unique family of excess formulas on this refined level satisfying these properties.

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