

Title: A motivic construction of ramification filtrations.

Abstract: We give a new interpretation of Artin conductors of characters in the framework of theory of motives with modulus. It gives a unified way to understand Artin conductors of characters and irregularities of line bundle with integrable connections as well as overconvergent F -isocrystals of rank 1. It also gives rise to new conductors, for example, for G -torsors with G a finite flat group scheme, which specializes to the classical Artin conductor in case $G = \mathbb{Z}/n\mathbb{Z}$. We also give a motivic proof of a theorem of Kato and Matsuda on the determination of Artin conductors along divisors on smooth schemes by its restrictions to curves. Its proof is based on a motivic version of a theorem of Gabber-Katz. This is a joint work with Kay Rülling.