

Motivic Zeta Function

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Definiton 1. In the following the term *k-variety* always means a separated, integral scheme of finite type over a field k . Denote by \mathcal{V}_k the category of k -varieties.

Definiton 2. Let k be a Field. Consider the group of formal linear combinations of isomorphism-classes in \mathcal{V}_k . Setting $[X] \times [Y] := [X \times Y]$ makes this into a ring. The *Grothendieck ring of varieties* $K_0[\mathcal{V}_k]$ is then obtained by modding out relations of the form

$$[X] - [Y] = [X \setminus Y]$$

Where Y is closed in X .

A *motivic measure* is a ringhomomorphism $\mu : K_0[\mathcal{V}_k] \rightarrow A$ into a ring A . The identity function $\text{id} : K_0[\mathcal{V}_k] \rightarrow K_0[\mathcal{V}_k]$ is called the *universal motivic measure*.

In their paper [1] Larsen and Lunts prove the following result:

References

- [1] Michael Larsen and Valery A. Lunts. Motivic measures and stable birational geometry. *Mosc. Math. J.*, 3(1):85–95, 259, 2003.