ERRATA TO “DISCRIMINANTS IN THE GROTHENDIECK RING”

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The definition of $\mathcal{M}$ in Section 1.1 should be the quotient of $K_0(\text{Var}_K)$ by relations of the form $[X] - [Y]$ whenever $X \to Y$ is a radicial surjective morphism of varieties over $K$, and all further statements in the paper should use this corrected definition. This quotient of the Grothendieck ring is often taken for applications to motivic integration (see [Mus11, Section 7.2] and [CNS18, Section 4.4]). When $K$ has characteristic 0, these additional relations were already trivial in $K_0(\text{Var}_K)$ (e.g. see [Mus11, Prop 7.25]). The motivic measure of point counting over a finite field still factors through this new definition of $\mathcal{M}$. This correction is necessary so that the proofs in the paper, in particular those of Theorem 1.13 and in Section 5, are correct. The arguments claim equality in $\mathcal{M}$ of $[X]$ and $[Y]$ where we have a morphism $X \to Y$ that is bijective on points over any algebraically closed field. Such an argument is valid in the corrected definition of $\mathcal{M}$ above ([Mus11, Remark A.22]), but is not known to be valid in $K_0(\text{Var}_K)$.

We thank Margaret Bilu and Sean Howe for pointing out this mistake and the necessary correction. See [BH19] for further discussion of this issue.

REFERENCES


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