

Correction to the article Preorientations of the derived motivic multiplicative group

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We correct a claim concerning motivic S^1 -deloopings.

55U35; 18D10, 19D06, 55P48

In [3, Theorem 4.4], we claim that the classical recognition principle of May et al carries over to motivic S^1 -spectra with respect to the \mathcal{A}^1 -local model structure. Unfortunately, the proof of this theorem is incomplete.

Moreover, Choudhury [1] shows that a certain \mathcal{A}^1 -local sheaf $\mathbb{Z}(\mathbf{G}_m)$ of abelian groups is not strongly \mathcal{A}^1 -invariant. Hence this sheaf, considered as a group-like object in $\Delta^{\text{op}} \text{PrShv}(\mathbb{C})$, has only S^1 -deloopings which are not \mathcal{A}^1 -local, contradicting [3, Theorem 4.4]. The correct version of Theorem 4.4 is stated and proved in the recent preprint of Elmanto, Hoyois, Khan, Sosnilo and Yakerson [2]. If we just consider the Nis-local model structure before \mathcal{A}^1 -localization, Theorem 4.4 is true by Lurie [4, Theorem 5.2.6.15].

Consequently, the proof of Theorem 1.2 of [3] is incomplete for the \mathcal{A}^1 -local structure and complete only Nis-locally. Currently we do not know if Theorem 1.2 is true as stated; hopefully future research will answer this question. On the other hand, the mistake does not affect any of the results of Section 3 of [3], where various model structures related to motivic operads are studied.

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References

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