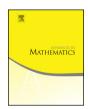


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## Corrigendum

Corrigendum to "The six operations in equivariant motivic homotopy theory" [Adv. Math. 305 (2017) 197–279 ]



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The proof of the key Theorem 2.21 in [4] is incorrect. Towards the end of the proof it is claimed that  $\Im(v) \simeq \Im(v)$ , but in fact we only have an epimorphism  $\Im(v) \twoheadrightarrow \Im(v)$ , and it is trivial to obtain an example where the constructed scheme  $\hat{V}$  fails to be flat at v over S; for instance, it can be arranged that  $\hat{V} = V$ .

The result is nevertheless true if we allow passing to an étale neighborhood of V in X, as we now explain. We fix a base scheme B and a flat finitely presented group scheme G

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over B. Given a G-scheme X and a G-invariant closed subscheme  $Z \subset X$ , we shall say that a G-morphism  $f \colon X' \to X$  is a G-equivariant étale neighborhood of Z if it is locally finitely presented, if the induced map  $Z \times_X X' \to Z$  is an isomorphism, and if f is étale at all points lying over Z.

**Theorem A** (Correct version of Theorem 2.21). Suppose that B is affine and that G is linearly reductive. Let

$$\begin{array}{ccc} X_Z & \stackrel{t}{\longrightarrow} & X \\ \downarrow & & \downarrow p \\ Z & \stackrel{s}{\longrightarrow} & S \end{array}$$

be a cartesian square of G-schemes where X is affine and s is a closed immersion. Let  $V \subset X_Z$  be a finitely presented G-invariant closed subscheme of  $X_Z$  that is smooth (resp. étale) over Z. Suppose that p is smooth at each point of V and that X has the G-resolution property. Then there exists an affine G-equivariant étale neighborhood  $X' \to X$  of V and a finitely presented G-invariant closed subscheme  $\hat{V} \subset X'$  lifting V such that  $\hat{V} \to S$  is smooth (resp. étale) at each point of V.

Theorem 2.21 is cited five times in the rest of the paper, but Theorem A suffices in each case:

- In Remark 2.22: This remark should now be ignored.
- In Corollary 2.23: No changes are needed.
- In Corollary 2.24: No changes are needed.
- In Lemma 4.11: To use Theorem A, one has to replace  $\hat{V}$  (hence  $\tilde{V}$  and  $\tilde{W}$ ) by an affine G-equivariant étale neighborhood of W; this does not affect the rest of the argument.
- In Theorem 4.18: When proving assertion (\*), after reducing to the case S small and affine, Lemma 4.16 allows us to replace X by any affine G-equivariant étale neighborhood of t(Z). Given this, Theorem A applies in the same way.

To prove Theorem A, we need an equivariant version of Arabia's theorem on lifting locally free sheaves<sup>1</sup> along closed immersions [1, Théorème 1.2.3]:

**Theorem B.** Suppose that B is affine and that G is linearly reductive. Let  $s: Z \hookrightarrow X$  be a closed G-immersion between affine G-schemes and let  $\mathbb N$  be a locally free G-module on Z. If X has the G-resolution property, there exists an affine G-equivariant étale neighborhood  $X' \to X$  of Z and a locally free G-module  $\mathbb M$  on X' lifting  $\mathbb N$ .

<sup>&</sup>lt;sup>1</sup> Locally free sheaves are tacitly of finite rank in what follows.

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