Erratum for "A Differentiable Monoid of Smooth Maps on Lie Groupoids"

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Abstract. This is a correction to a recent paper of H. Amiri and A. Schmeding [*A differentiable monoid of smooth maps on Lie groupoids*, J. Lie Theory 29/4 (2019) 1167–1192].

Mathematics Subject Classification: Primary: 58B25; secondary: 22E65, 22A22, 22A15, 58D05, 58D15, 58H05.

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We were recently made aware of a serious error in the recent paper [1] by H. Amiri and A. Schmeding. The error concerns the proof of the Stacey-Roberts Lemma. In Step 4b on p. 1191 of the published proof, the computation of the tangent map $T_{0_x}P$ of the parallel transport map P is flawed. The corrected tangent map reads

$$T_{0_x}P(0, (0, h)) = (x, 0, (h, (0, 0)).$$

Unfortunately, the new formula shows that the argument given in step 4 of the proof is incorrect. It does not prove that the map η_X is a local addition.

For a correct argument one needs to avoid splitting the map η_X into components (as was done in the erroneous argument in [1]). Then an involved computation shows that η_X is a local addition thus completing the proof of the Stacey-Roberts Lemma.

Hence the Stacey-Roberts Lemma remains true if one replaces the erroneous part of the published proof. A full description and solution of the problem can be found in [2]. In particular, the argument showing that η_X (or the equivalent construction in the context of the paper) is a local addition is Proposition 4.3 of [2].

References

[1] H. Amiri, A. Schmeding: *A differentiable monoid of smooth maps on Lie groupoids*, J. Lie Theory 29/4 (2019) 1167–1192.

[2] P. Kristel, A. Schmeding: *The Stacey-Roberts lemma for Banach manifolds*, arXiv: 2411.00587 (2024).

[3] P. Steffens: *Representability of elliptic moduli problems in derived C^∞-geometry*, arXiv: 2404.07931 (2024).

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