## ERRATUM TO "FROM LOOP GROUPS TO 2-GROUPS"

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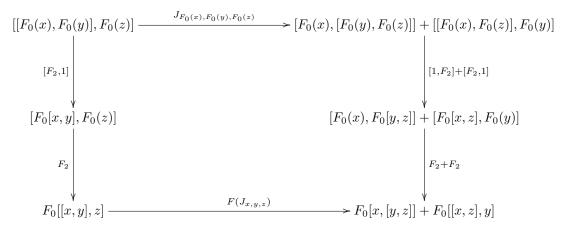
## Abstract

There were a number of sign errors in our paper "From loop groups to 2-groups" [Homology Homotopy Appl. 9 (2007), 101–135]. Here we explain how to correct those errors.

The following sign corrections to our paper [BCSS] make the article consistent with [BC] and [LM], in particular the definition of morphisms between 2-term  $L_{\infty}$ -algebras. The definition given in [BC], Definition 4.3.4, was independently checked to be consistent with the one suggested in [LM, Remark 5.3] by Kevin van Helden. Since the main theorem of the paper involves several such morphisms, a number of signs in the data of some  $L_{\infty}$ -algebra morphisms need to be changed. Moreover, the definition of the crossed module action  $\alpha$  in Proposition 2.4 led to an inconsistency independent of the  $L_{\infty}$ -algebra material, found by David Michael Roberts. The corrected sign is self-consistent, as well as agreeing with the rest of the paper. There were additionally some typos in an earlier paper [MS] leading to some innocuous sign errors that do not impact the other calculations.

All the corrections here have been made in the current arXiv version of our paper [BCSS]. All of our calculations have been independently checked by Rist, Saemann and Wolf [RSW], as well as by Roberts.

• The big commutative diagram in Definition 2.2 should be replaced by



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Article available at http://dx.doi.org/10.4310/HHA.????.v??.n??.a? Copyright © ????, John C. Baez, Alissa S. Crans, Urs Schreiber and Danny Stevenson. Permission to copy for private use granted. • Equation (5) needs to be replaced by

$$\begin{aligned} \phi_1(l_3(x,y,z)) - l_3(\phi_0(x),\phi_0(y),\phi_0(z)) &= \\ \phi_2(x,l_2(y,z)) + \phi_2(y,l_2(z,x)) + \phi_2(z,l_2(x,y)) + \\ l_2(\phi_0(x),\phi_2(y,z)) + l_2(\phi_0(y),\phi_2(z,x)) + l_2(\phi_0(z),\phi_2(x,y)) \end{aligned}$$

• The definition of  $\kappa$  in equation (12) should be

$$\kappa(f,g) = \exp\left(-2ik \int_0^{2\pi} \int_0^{2\pi} \langle f(t)^{-1} f'(t), g'(\theta) g(\theta)^{-1} \rangle d\theta dt\right),$$

correcting a typo in [MS].

• The definition of the normal subgroup N below equation (12) should read Let N be the subset of  $P_0\Omega G \times U(1)$  consisting of pairs  $(\gamma, z)$  such that  $\gamma \colon [0, 2\pi] \to \Omega G$  is a loop based at  $1 \in \Omega G$  and

$$z = \exp\left(ik \int_{D_{\gamma}} \omega\right)$$

where  $D_{\gamma}$  is any disk in  $\Omega G$  with  $\gamma$  as its boundary.

for consistency with the definition of  $\kappa$  above.

• The definition of  $d\alpha$  in the statement of Proposition 3.1 should be

$$d\alpha(p)(\ell,c) = ([p,\ell], 2k \int_0^{2\pi} \langle \ell(\theta), p'(\theta) \rangle d\theta).$$

• The definition of  $\beta_p$  in the proof of Proposition 3.1 should be

$$\beta_p(\xi) = 2 \int_0^{2\pi} \langle \xi(\theta), p(\theta)^{-1} p'(\theta) \rangle d\theta.$$

• The definition of  $\phi_2$  in the statement of Lemma 5.4 should be

$$\phi_2(p_1, p_2) = k \int_0^{2\pi} (\langle p_2, p_1' \rangle - \langle p_2', p_1 \rangle) d\theta$$

• The definition of  $\lambda_2$  in the proof of Lemma 5.5 should be

$$\lambda_2(\ell_1, \ell_2) = \left(0, 2k \int_0^{2\pi} \langle \ell_1, \ell_2' \rangle \, d\theta\right)$$

With these changes, the calculations in the proofs all go through, leaving the results unchanged.

## References

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