

**CORRIGENDUM TO**  
**‘ON DIFFERENTIAL CHARACTERISTIC CLASSES’**  
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**Abstract**

In this erratum we correct a mistake in Ho [‘On differential characteristic classes’, *J. Aust. Math. Soc.* **99**(1) (2015), 30–47].

**1. Corrigendum**

A typo in line –3 of [2, page 34]:  $\Omega_{\mathbb{Z}}^{2k-1}(M)$  must be replaced by  $\Omega_A^{2k-1}(M)$ .

A mistake in [2, Proposition 3.1]: it does not hold in the stated generality. In fact, [2, Proposition 3.1] only holds for Lie groups  $G$  with finitely many components with the additional assumption that  $H^{\text{even}}(BG)$  is torsion free. In particular, [2, Proposition 3.1] holds for  $\text{GL}(n; \mathbb{C})$  and  $\text{U}(n)$ ; that is, for differential characteristic classes for complex (Hermitian) vector bundles, while it does not hold for  $\text{O}(n)$ , and so forth. The differential Stiefel–Whitney classes [3] is a counterexample.

Of course [2, Proposition 3.1] would hold in the stated generality if the condition  $\delta_2(S_{P,u}(E, \theta)) = u$  is added, as guaranteed by [1, Theorem 2.2]. But the point of the proof of [2, Proposition 3.1] is to avoid using universal bundles and universal connections. The proof of the general case and the analog of [2, Proposition 3.1] for some other Lie groups will be addressed in a future paper.

**Acknowledgement**

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**References**

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- [2] M.-H. Ho, ‘On differential characteristic classes’, *J. Aust. Math. Soc.* **99**(1) (2015), 30–47.
- [3] J. W. Zweck, ‘The Stiefel–Whitney spark’, *Houston J. Math.* **27**(2) (2001), 325–351.

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