

**CORRECTION TO “THE SEIBERG-WITTEN EQUATIONS FOR
 FAMILIES AND DIFFEOMORPHISMS OF 4-MANIFOLDS”,
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Proposition 2.1 in [1] is incorrect. We need the extra assumption

$$(0.1) \quad H^1(B; \mathcal{H}^1) = 0,$$

where \mathcal{H}^1 is the Serre local system of $H^1(X; \mathbb{Z}_2)$: In the proof of Proposition 2.1 in [1] two exact sequences are stated. Under the assumption $b_1(X) = 0$, the exact sequence with \mathbb{Z} -coefficient is valid, since $E_2^{p,1} = 0$ for all p . However, the exact sequence with \mathbb{Z}_2 -coefficient does not hold in general. Alternatively, under (0.1), we have

$$H^1(X; \mathbb{Z}_2)^{\pi_1(B)} \xrightarrow{d_2} H^2(B; \mathbb{Z}_2) \rightarrow H^2(\mathbb{X}; \mathbb{Z}_2) \rightarrow \text{Ker } d_3,$$

which, together with the \mathbb{Z} -coefficient sequence, implies the proposition.

Accordingly, Theorem 1.1, Theorem 1.2 and Corollary 1.3 in [1] are to be modified as follows.

(1) When $B = S^1$ and \mathbb{X} is a mapping cylinder $X \times [0, 1]/f$, (0.1) is equivalent to the condition

$$(0.2) \quad H^1(X; \mathbb{Z}_2)^{f^*} = 0,$$

where f^* is the automorphism on $H^1(X; \mathbb{Z}_2)$ induced from f . In fact, $H^1(B; \mathcal{H}^1) \cong \text{Coker}(f^* - I)$, where I is the unit matrix. Hence we need the extra assumption (0.2) in Theorem 1.2.

(2) Instead of Corollary 1.3 in [1], an alternative example of Theorem 1.2 is given by a connected sum of an Enriques surface and a rational homology 4-sphere Y with $H^1(Y; \mathbb{Z}_2) = \mathbb{Z}_2$.

(3) When $B = T^2$ and \mathbb{X} is a X -bundle made from two diffeomorphism f and g , (0.1) is equivalent to the condition

$$(0.3) \quad \text{rank} \begin{pmatrix} I - g^* \\ -(I - f^*) \end{pmatrix} = \dim H^1(X; \mathbb{Z}_2),$$

where f^* and g^* are automorphisms on $H^1(X; \mathbb{Z}_2)$ induced from f and g . Hence we need the extra assumption (0.3) in Theorem 1.1.

REFERENCES

- [1] N. NAKAMURA, *The Seiberg-Witten equations for families and diffeomorphisms of 4-manifolds*, Asian J. Math., 7 (2003), pp. 133–138.

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