Münster J. of Math. **6** (2013), 555–556
urn:nbn:de:hbz:6-55309457006
Münster Journal of Mathematics

Erratum to: How to recognize a 4-ball when you see one

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(Communicated by Burkhard Wilking)

The proof of Lemma 6.2 in the previous article [GZ] is incomplete as stated. For our purposes, it suffices to prove this lemma for a specific choice of $\tau \in \mathcal{T}$. So the statement and proof of Lemma 6.2 should be replaced by the following.

Lemma 6.2. *For* $\tau = \exp$ *we have* $\lim_{s\to\infty} l(s) = 0$.

Proof. Since J is ω_τ-compatible and w is J-holomorphic, we have

$$|\dot{\gamma}_s|_\tau = |\partial_t w|_\tau = |\partial_s w|_\tau,$$

hence $|\dot{\gamma}_s|^2_\tau = |\nabla w|^2_\tau/2$. The choice $\tau = \exp$ and condition (J2) give us a curvature bound on the corresponding metric. This allows us to apply the mean value inequality [32, Lemma 4.3.1], cp. the computations on page 84 of [32]. For s large, the assumptions of that lemma are satisfied, so there is a constant C depending only on the geometry of the manifold such that

$$\begin{aligned} |\dot{\gamma}_s(t)|^2_\tau &= \frac{1}{2}|\nabla w(s+\mathrm{i}t)|^2_\tau \\ &\leq C\int_{B_1(s+\mathrm{i}t)\cap(\mathbb{R}\times[0,\pi])} |\nabla w|^2_\tau \\ &\leq C\int_{[s-1,\infty)\times[0,\pi]} |\nabla w|^2_\tau. \end{aligned}$$

Hence $|\dot{\gamma}_s(t)|_\tau \to 0$ uniformly in t for $s \to \infty$. □

References

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Received September 2, 2013; accepted October 15, 2013

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