CORRECTIONS TO "ELLIPTIC BINDINGS FOR DYNAMICALLY CONVEX REEB FLOWS ON THE REAL PROJECTIVE THREE-SPACE"

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Abstract. We correct a false claim made in the introduction related to the uniqueness of universally tight contact structures in three dimensional lens spaces. The results in the paper are not affected by this correction. We also add an explanation about how Corollary 1.8 follows from Theorem 1.7.

In page 43 one reads: *"This property determines ξ_0 up to a diffeomorphism, i.e., if $\xi = ker\lambda$ is a contact structure on L(p,q) and $\pi^*_{p,q}\xi$ is tight then there exists a diffeomorphism $h : L(p,q) \to L(p,q)$ satisfying $h_*\xi = \xi_0$."* This claim is false in general, but it is true in the special case $(p,q) = (2,1)$ which is the only case that is used in our arguments. The proof of Theorem 1.3 starts by lifting the dynamically convex contact form on $L(2,1) = \mathbb{R}P^3$ to a contact form on its universal covering S^3 which must also be dynamically convex, and hence tight by results from [1]. Then applying the above claim in the case $p = 2$, $q = 1$ we may assume that the contact form defines the standard contact structure on $L(2,1)$. The rest of the proof of Theorem 1.3 remains the same.

Now we explain how Corollary 1.8 follows from Theorem 1.7. Consider a dynamically convex contact form on $L(p,q)$ that defines a contact structure ξ and admits a p-unknotted closed Reeb orbit with self-linking number $-1/p$. Using Theorem 1.3 from [2] we see that $(L(p,q),\xi)$ is contactomorphic to $(L(p,k),\xi_{\rm std})$ for some k. The conclusions of Corollary 1.8 now follow from a direct application of Theorem 1.7.

References

[1] H. Hofer, K. Wysocki and E. Zehnder. *A characterization of the tight three sphere II.* Commun. Pure Appl. Math. **55** (1999), no. 9, 1139–1177.

[2] U. Hryniewicz, J. Licata, Pedro A. S. Salomão. *A dynamical characterization of universally tight lens spaces*, Proceedings of the London Mathematical Society, **110**, (2014), 213–269.