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ERRATUM

Erratum to "Clairaut and Einstein conditions for locally conformal Kaehler submersions"

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We noticed a small error in the proof of Theorem 3.5 in our paper cited in the heading. Here, we explicitly explain some details. The mentioned theorem in the proof asserts that the Lee vector field of the total manifold of a locally conformal Kaehler submersion cannot be vertical. But this is not true in general. Therefore, that theorem is not valid, and unfortunately, that theorem slightly affects the validity of Theorem 3.5 of our paper Pirinççi et al. (2023). We would like to update this theorem and its proof as follows:

Theorem 3.5. Let $\pi : (M, J, g) \to (N, J', g')$ be a l.c.K. submersion with connected fibers. If a curve α is a horizontal geodesic on M with respect to both ∇ and $\tilde{\nabla}$, then the dimension of horizontal distribution is equal to 2 or the Lee vector field B of (M, J, g) is vertical.

Proof Let $\{X_1, ..., X_m\}$ be an orthonormal basis of the horizontal distribution of the submersion π at $p \in \pi^{-1}(q)$, where $q \in N$. Then there exist horizontal geodesic curves $\alpha_1, ..., \alpha_m$ such that $\dot{\alpha}_i = X_i$, $i = 1, ..., m$. Thus, for every $i = 1, ..., m$, we have

$$g(B, X_i)X_i = \frac{1}{2}B^h \tag{1}$$

from (5) and (16). Taking summation of the equation (1) over i, we obtain

$$\left(1 - \frac{m}{2}\right)B^h = 0.$$

Hence, it follows that $m = 2$ or $B^h = 0$. In the second case we find that B is vertical. □

Remark: The validity of Theorem 3.5 does not affect the other results in Pirinççi et al. (2023) in any way.

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