

Erratum

to the paper “Some results on the geometry of tangent bundle of Finsler manifolds”, *Publ. Math. Debrecen* (2007), 185–193

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The formula (4.3) is incorrect. It should be the following:

$$\begin{aligned} \tilde{R}\left(\frac{\partial}{\partial y^i}, \frac{\partial}{\partial y^j}\right) \frac{\partial}{\partial y^k} &= \tilde{\nabla}_{\frac{\partial}{\partial y^i}} \tilde{\nabla}_{\frac{\partial}{\partial y^j}} \frac{\partial}{\partial y^k} - \tilde{\nabla}_{\frac{\partial}{\partial y^j}} \tilde{\nabla}_{\frac{\partial}{\partial y^i}} \frac{\partial}{\partial y^k} - \tilde{\nabla}_{[\frac{\partial}{\partial y^i}, \frac{\partial}{\partial y^j}]} \frac{\partial}{\partial y^k} \\ &= \left(\frac{\partial L_{jk}^l}{\partial y^i} - \frac{\partial L_{ik}^l}{\partial y^j} + L_{jk}^s C_{si}^l + C_{jk}^s L_{si}^l - L_{ik}^s C_{sj}^l - C_{ik}^s L_{sj}^l \right. \\ &\quad \left. + \frac{1}{2} L_{jk}^t y^s R_{sit}{}^l - \frac{1}{2} L_{ik}^t y^s R_{sjt}{}^l \right) \frac{\delta}{\delta x^l} \\ &\quad + (L_{ik}^s L_{js}^l - L_{jk}^s L_{si}^l + C_{ik}^s C_{js}^l - C_{jk}^s C_{si}^l) \frac{\partial}{\partial y^l}, \end{aligned} \quad (4.3)$$

here the last two terms $C_{ik}^s C_{js}^l - C_{jk}^s C_{si}^l$ were missed in the original paper. Fortunately, we need only to make a minor modification. Assume that $\tilde{\nabla} \tilde{R} = 0$, then by (2.3), (4.3), (4.4) and Lemma 2.1 we have

$$\begin{aligned} 0 &= y^j \left(\tilde{\nabla}_\eta \tilde{R} \right) \left(\frac{\partial}{\partial y^i}, \frac{\partial}{\partial y^j} \right) \frac{\partial}{\partial y^k} = y^j \tilde{\nabla}_\eta \left(\tilde{R} \left(\frac{\partial}{\partial y^i}, \frac{\partial}{\partial y^j} \right) \frac{\partial}{\partial y^k} \right) \\ &= -y^j \frac{\partial L_{jk}^l}{\partial y^i} \frac{\delta}{\delta x^l} = L_{ik}^l \frac{\delta}{\delta x^l}, \end{aligned}$$

and hence, $L_{jk}^i = 0$, which together with (4.3) yields

$$\tilde{R} \left(\frac{\partial}{\partial y^i}, \frac{\partial}{\partial y^j} \right) \frac{\partial}{\partial y^k} = (C_{ik}^s C_{js}^l - C_{jk}^s C_{si}^l) \frac{\partial}{\partial y^l}.$$

The author is indebted to Professor Aurel Bejancu for pointing out the mistake.

Consequently,

$$0 = \left(\tilde{\nabla}_\eta \tilde{R} \right) \left(\frac{\partial}{\partial y^i}, \frac{\partial}{\partial y^j} \right) \frac{\partial}{\partial y^k} = -2 \left(C_{ik}^s C_{js}^l - C_{jk}^s C_{si}^l \right) \frac{\partial}{\partial y^l},$$

and we again arrive at $\tilde{R} \left(\frac{\partial}{\partial y^i}, \frac{\partial}{\partial y^j} \right) \frac{\partial}{\partial y^k} = 0$.

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