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Semi-symmetric metrical $n$-linear connections in the $k$-osculator bundle. (English)

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In this paper we introduce the concept of semi-symmetric metrical $N$-linear connections on the total space $E = Osc_k M$ as a straightforward extension of that on the 2-osculator bundle [the first author, Balkan J. Geom. Appl. 2, No. 2, 113–118 (1997; Zbl 0905.53019)]. We determine all semi-symmetric metrical $N$-linear connections in the $k$-osculator bundle and we study the group of transformations of these connections and its invariants. This paper is a generalization of the same subject in the bundle of accelerations the first author [loc. cit.]. As to the terminology and notations we use those from R. Miron and M. Hashiguchi [Rep. Fac. Sci., Kagoshima Univ., Math. Phys. Chem. 12, 21–35 (1979; Zbl 0441.53054)], which are essentially based on M. Matsumoto’s book [Okayama, Japan: Okayama University, 214 p. (1970; Zbl 0193.22103)].

For the entire collection see [Zbl 1401.53002].

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53C05 Connections (general theory)

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