Kozma, L.

On osculation of homogeneous connections. (English) Zbl 0794.53016

Szenthe, J. (ed.) et al., Differential geometry and its applications. Proceedings of a colloquium, held in Eger, Hungary, August 20-25, 1989, organized by the János Bolyai Mathematical Society. Amsterdam: North- Holland Publishing Company. Colloq. Math. Soc. János Bolyai. 56, 457-468 (1992).

Osculation of "nonlinear objects" by "linear" ones is an important tool of Finsler geometry applied mainly by A. Moór using classical tensor calculus. The author presents a general and modern formulation of this idea in the language of fiber bundles. Starting from a homogeneous (nonlinear) connection H in a vector bundle and osculating a (deflection free) Finsler pair connection (H^B, H) along a section σ, he constructs a linear connection H^σ in the vector bundle whose geodesics have second order contact with the geodesics of H. An illuminating description of the Berwald connection and some applications complete the paper.

For the entire collection see [Zbl 0764.00002].

Reviewer: J.Szilasi (Debrecen)

MSC:

53C05 Connections (general theory)
53C60 Global differential geometry of Finsler spaces and generalizations (areal metrics)

Keywords:

nonlinear connection; Finsler pair connection; geodesics; Berwald connection