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Title: On a family of connections in Finsler geometry

Author(s): Akbar Tayebi, Esmaeil Azizpour and Ebrahim Esrafilian

In this paper, we introduce a new family of linear torsion-free connections for Finsler metrics. This family of connections defines a Riemannian curvature tensor R and a non-Riemannian quantity P. We show that P contains all the non-Riemannian information, namely, $P = 0$ if and only if the Finsler metric is Riemannian. In fact, this family of connections makes a systematical analysis of connections that characterize Riemannian metrics.

Address:
Akbar Tayebi
Department of Mathematics and Computer Sciences
Iran University of Science and Technology
Tehran
Iran
E-mail: akbar_tayebi@iust.ac.ir

Address:
Esmaeil Azizpour
Department of Mathematics, Faculty of Sciences
The University of Guilan
PO Box 1914
Rasht
Iran
E-mail: e_azizpour@guilan.ac.ir

Address:
Ebrahim Esrafilian
Department of Mathematics
Iran University of Science and Technology
Tehran
Iran