Year: 2017 | **Vol.: 90** | **Fasc.: 3-4**

Title: On distance functions induced by Finsler metrics

Author(s): Akbar Tayebi and Abdollah Alipour

In this paper, we find the necessary and sufficient condition under which a distance function is induced by a Finsler metric. Then, we study some analytical properties of distance functions induced by Finsler metrics. Projectively flat Finsler metrics on a convex domain in $\mathbb{R}^n$ are regular solutions to Hilbert's Fourth Problem. We find necessary and sufficient condition for a Finsler metric to be projectively flat through its induced distance function.

Address:
Akbar Tayebi
Department of Mathematics
Faculty of Science
University of Qom
Qom
Iran

Address:
Abdollah Alipour
Department of Mathematics
Faculty of Science
University of Qom
Qom
Iran