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Title: On a class of locally dually flat Finsler metrics of isotropic flag curvature

Author(s): Qiaoling Xia

In this paper, we characterize a class of locally dually flat (α, β) metrics $F = \alpha + \epsilon\beta + k\frac{\beta^2}{\alpha}$ defined by a Riemannian metric α and a non-zero 1-form β , where ϵ and k are non-zero constants. As an application, we prove that there is no locally dually flat metric in the form $F = \alpha + \epsilon\beta + k\frac{\beta^2}{\alpha}$ ($\epsilon \neq 0$, $k \neq 0$, $\beta \neq 0$) with isotropic S -curvature unless it is Minkowskian. Moreover, we prove that if $F = \alpha + \epsilon\beta + k\frac{\beta^2}{\alpha}$ ($\epsilon \neq 0$, $k \neq 0$, $\beta \neq 0$) is locally dually flat, then it is locally projectively flat if and only if it is of constant flag curvature, and there is no locally dually flat metrics in the form $F = \alpha + \epsilon\beta + k\frac{\beta^2}{\alpha}$ ($\epsilon \neq 0$, $k \neq 0$, $\beta \neq 0$) of isotropic flag curvature unless it is Minkowskian.

Address:

Qiaoling Xia
Department of Mathematics
Zhejiang University
Hangzhou 310027
P.R.China