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The L-dual of a Matsumoto Space

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Abstract

In this paper we shall give the L-dual of a Matsumoto space. In [3, 8] the L-duals of a Randers and Kropina space were introduced.

Schimbat ordinea propozițiilor

Keywords: Matsumoto space, Finsler space, Cartan space, the duality between Finler and Cartan spaces.

De adăugat aici Introduction

1 ~~Introduction~~ The Legendre transformation

(n-dimensional
n-dim.

{\bf ...}
Puneți în \bf tot ceea ce am subliniat

Let $F^n = (M, F)$ be an n-dimensional Finsler space. The fundamental function $F(x, y)$ is called an (α, β)-metric if F is homogeneous function of α and β of degree one, where $\alpha^2 = a(y, y) = a_{ij}y^iy^j$, $y = y^i\frac{\partial}{\partial x^i}\,|_x \in T_xM$ is Riemannian metric, and $\beta = b_i(x)y^i$ is a 1-form on $\tilde{TM} = TM \setminus \{0\}$.
A Finsler space with the fundamental function:

$$F(x, y) = \alpha(x, y) + \beta(x, y) \tag{1}$$

(1.1)

is called a Randers space.
A Finsler space having the fundamental function:

$$F(x, y) = \frac{\alpha^2(x, y)}{\beta(x, y)} \tag{2}$$

(1.2)

is called a Kropina space and one with

$$F(x, y) = \frac{\alpha^2(x, y)}{\alpha(x, y) - \beta(x, y)} \tag{3}$$

(1.3)

is called a Matsumoto space.
Let $C^n = (M, K)$ be an n-dimensional Cartan space having the fundamental function $K(x, p)$. We also consider Cartan spaces having the metric function of the following form~~s~~:

fără s final

$$K(x, p) = \sqrt{a^{ij}(x)p_ip_j} + b^i(x)p_i \,, \tag{4}$$

Atenție:
Renumerotați formulele pe paragrafe (1.1), (1.2), ...
(2.1), (2.2), ...
și faceți schimbările corespunzătoare în text!