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On Finsler surfaces of constant flag curvature with a
Killing field *

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Abstract

We study two-dimensional Finsler metrics of constant flag curvature and show that such Finsler metrics that admit a Killing field can be written in a normal form that depends on two arbitrary functions of one variable. Furthermore, we find an approach to calculate these functions for spherically symmetric Finsler surfaces of constant flag curvature. In particular, we obtain the normal form of the Funk metric on the unit disk \mathbb{D}^2 .

Key words and phrases: Finsler metric, constant flag curvature, Killing field, normal form.

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