

Minimal surfaces in non-Minkowskian Randers spaces

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Abstract. In this paper, we investigate minimal hypersurfaces in $\mathbb{R}^n$ with respect to the Busemann–Hausdorff measure in a class of Finsler n -spaces $(\mathbb{R}^n, \tilde{F}_b = \tilde{\alpha} + \tilde{\beta})$, called Randers spaces, where $\tilde{\alpha}$ is the Euclidean metric and $\tilde{\beta} = b(x)dy^n$ is a controlled one-form. We emphasize the fact that F is non-Minkowskian, since $b = b(x)$ is a non-constant function of x , which is allowed here. We particularly examine graphs defined on the xy -plane that are invariant under one-dimensional isometry groups of $(\mathbb{R}^3, \tilde{F}_b)$. By reducing the minimal graph equation to an ordinary differential equation (ODE), we obtain a new class of explicit examples of minimal surfaces in Finsler geometry.

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