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Some theorems for hypersurface of Randers spaces. (English) Zbl 1465.53084

Summary: In this paper, we consider the hypersurfaces of Randers space with constant flag curvature. (1) Let $(M^{n+1}, F)$ be a Randers-Minkowski space. If $(M^n, F)$ is a hypersurface of $(M^{n+1}, F)$ with constant flag curvature $K = 1$, then we can prove that $M$ is Riemannian. (2) Let $(M^{n+1}, F)$ be a Randers space with constant flag curvature. Assume $(M, F)$ is a compact hypersurface of $(M^{n+1}, F)$ with constant mean curvature $|H|$. Then a pinching theorem is established, which generalizes the result of H. Alencar and M. P. do Carmo [Proc. Am. Math. Soc. 120, No. 4, 1223–1229 (1994; Zbl 0802.53017)] from the Riemannian case to the Randers space.

MSC:
53C60 Global differential geometry of Finsler spaces and generalizations (areal metrics)
53C40 Global submanifolds

Keywords:
Randers space; hypersurfaces; constant mean curvature; constant flag curvature

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References:

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