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On $\eta$-biharmonic hypersurfaces with constant scalar curvature in higher dimensional pseudo-Riemannian space forms. (English) J. Math. Anal. Appl. 518, No. 1, Article ID 126670, 20 p. (2023)

Summary: In this paper, $\eta$-biharmonic hypersurfaces $M^n_r$ with constant scalar curvature in a pseudo-Riemannian space form are studied. Under the assumption that $M^n_r$ has diagonalizable shape operator with at most six distinct principal curvatures, we prove that $M^n_r$ has constant mean curvature. As an application, we obtain a partial classification result of these hypersurfaces and show that $(nc)$-biharmonic hypersurfaces must be minimal.

MSC:
53C42 Differential geometry of immersions (minimal, prescribed curvature, tight, etc.)
58E20 Harmonic maps, etc.

Keywords:
pseudo-Riemannian space forms; $\eta$-biharmonic maps; hypersurfaces; diagonalizable shape operator; constant scalar curvature

Full Text: DOI

References:
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