Rosenberg, Harold
Remarks on surfaces of large mean curvature. (English) Zbl 1163.53039

An orientable homogeneously regular 3-manifold $N$ means that there is some positive constant $R$ so that the geodesic balls of $N$ of radius $R$, centered at any point of $N$ are embedded, and in these balls, the sectional curvatures are bounded by a constant independent of the point of $N$ where the balls are centered. By using some results from his paper [Bull. Aust. Math. Soc. 74, No. 2, 227–238 (2006; Zbl 1104.53057)], the author proves the following result:

Let $c > 0$ and $H$ be constants satisfying

$$3H^2 + S(x) \geq c,$$

where $S$ is the scalar curvature of $N$. Then a complete embedded $H$-surface $M$ in $N$, of bounded curvature, is properly embedded.

Reviewer: Constantin Călin (Iaşi)

MSC:

53C42 Differential geometry of immersions (minimal, prescribed curvature, tight, etc.)

Keywords:

geodesic balls; sectional curvatures; homogeneously regular 3-manifolds

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References:


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