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Rigidity theorems of hypersurfaces in a sphere. (English) Zbl 0951.53037
Publ. Inst. Math., Nouv. Sér. 67(81), 112-120 (2000).

Let M be an n -dimensional ($n \geq 3$) compact hypersurface in an $(n + 1)$ -dimensional unit sphere S^{n+1} . Studying Cheng-Yau's self-adjoint operator the author gives conditions such that M is one of the following: (1) a totally umbilical hypersurface; (2) $M = S^1(r_1) \times S^{n-1}(r_2)$, where $r_1^2 = \frac{1}{1+\sqrt{n-1}}$, $r_2^2 = \frac{\sqrt{n-1}}{1+\sqrt{n-1}}$; (3) $M = S^m(r_1) \times S^{n-m}(r_2)$, for some m with $1 \leq m \leq n - 1$, where $r_1^2 = \frac{m-1}{n}$, $r_2^2 = \frac{n-m-1}{n}$.

Reviewer: [Neda Bokan \(Novi Beograd\)](#)

MSC:

[53C40](#) Global submanifolds
[53C24](#) Rigidity results

Cited in **2** Documents

Keywords:

[selfadjoint operator](#); [compact hypersurface](#); [unit sphere](#)

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