Rigidez de Hipersuperfícies Mínimas de Esferas com Curvatura de Ricci Constante

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Resumo/Abstract:
Let M be a compact oriented minimal hypersurface of the unit n-dimensional sphere $\mathbb{S}^n$. In this work we will point out that if the Ricci curvature of M is constant, then, we have that either $\mathrm{Ric} \equiv 1$ and M is isometric to an equator or, n is odd, $\mathrm{Ric} \equiv \frac{n-3}{n-2}$ and M is isometric to $S(\frac{\sqrt{2}}{2}) \times S(\frac{\sqrt{2}}{2})$. Next, we will prove that there exists a positive number $\epsilon(n)$ such that if the Ricci curvature of a minimal hypersurface immersed by the first eigenfunctions M satisfies that $\frac{n-3}{n-2} - \epsilon(n) \leq \mathrm{Ric} \leq \frac{n-3}{n-2} - \epsilon(n)$ and the average of the scalar curvature is $\frac{n-3}{n-2}$, then, the Ricci curvature of M must be constant and therefore M must be isometric to $S(\frac{\sqrt{2}}{2}) \times S(\frac{\sqrt{2}}{2})$.

Referências

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