

Biconservative submanifolds with higher codimension in Riemannian space-forms

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Abstract

An isometric immersion $f : M \rightarrow N$ between two Riemannian manifolds is biconservative if the tangent component of $\tau_2(f)$ vanishes identically, where τ_2 is the bitension field of M in N . By considering the definition of τ_2 , one can see that this condition is equivalent to

$$m\nabla\|H\|^2 + 4\text{trace}A_{\nabla^\perp H}(\cdot) + 4\text{trace}(\tilde{R}(\cdot, H)\cdot)^T = 0,$$

where H , A and ∇^\perp are the mean curvature, shape operator and normal connection of f and \tilde{R} is the curvature tensor of N .

In this talk, we would like to present a survey our recent results on biconservative submanifolds. We consider submanifolds with higher codimension in the Riemannian space-form S^n and in the product space $S^n \times \mathbb{R}$.

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