RIGIDITY RESULTS OF STABLE MINIMAL HYPERSURFACES IN RIEMANNIAN MANIFOLDS

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Abstract: Stable Bernstein problems asks whether two-sided stable minimal hypersurface in R^n (n<8) must be hyperplane. Based on Schoen-Simon-Yau's result and μ-bubble technique introduced by Gromov, there has been some important advances in higher dimensions recently. In this talk, we are concerned about the stable minimal hypersurfaces in general Riemannian manifolds. We show that certain combination of positive curvatures of ambient manifold forces the rigidity and nonexistence of stable minimal hypersurfaces in dimension 5. This generalizes result of Chodosh-Li-Stryker in dimension 4. This is a joint work with Zetian Yan.