

SPEAKER:

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TITLE:

On the Hull(s) of the n -sphere in \mathbb{C}^n

ABSTRACT:

This talk presents a result on the (global) Bishop problem for small perturbations of the unit sphere of $\mathbb{C} \times \mathbb{R}^{n-1}$ in \mathbb{C}^n . We show that if $S \subset \mathbb{C}^n$ is a sufficiently small perturbation of this sphere (in the C^3 -norm), then S bounds an $(n+1)$ -dimensional ball $M \subset \mathbb{C}^n$ that is foliated by analytic disks attached to S . Furthermore, if S is either smooth or real analytic, then so is M (up to its boundary). Finally, if S is real analytic (and satisfies a mild condition), then M is both the envelope of holomorphy and the polynomially convex hull of S . This generalizes the previously known case of $n = 2$ (CR singularities are isolated) to higher dimensions (CR singularities are nonisolated). This work is from a joint paper with Purvi Gupta, and the talk is intended to be accessible to graduate students.