Hearing Pseudoconvexity in Complex Manifolds

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Abstract

In this talk we relate pseudoconvexity with the vanishing of L^2 Dolbeault cohomology groups. On a pseudoconvex domain in a complex manifold, the L^2 Dolbeault cohomology might not even be Hausdorff. Recent results on the L^2 closed range property for $\bar{\partial}$ on an annulus between two pseudoconvex domains will be discussed. One can even characterize such domains through the spectral theory of their L^2 Dolbeault cohomology groups, thus hearing pseudoconvexity of the boundary. (Joint work with Debraj Chakrabarti, Siqi Fu, and Christine Laurent-Thiébaut).