İSTANBUL ANALYSIS SEMINARS

Rapid Polynomial Approximation on Stein Manifolds

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Abstract: A Stein manifold is said to be S-parabolic if it posesses a plurisubharmonic exhaustion function which is maximal outside a compact set. There exists a very natural way to define polynomials on S-parabolic manifolds and therefore it is natural to wonder whether classical theorems regarding polynomial approximations on the affine complex space $\mathbb{C}^N$ could be generalized to such manifolds. One such classical theorem is a theorem of Siciak (1962). Siciaks theorem describes the equivalence between possible holomorphic continuation of a function f defined on a compact set K, and the decay of the sequence (d_n) of the best uniform approximation of f on K by polynomials of degree less than or equal to n. In this talk we discuss how we can generalize Siciaks theorem to S-parabolic Stein manifolds.

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