Title

The Diederich-Fornaess Index and Hermitian Geometry

Speaker: Phil Harrington, University of Arkansas
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Abstract: Let $\Omega$ be a relatively compact domain with $C^2$ boundary in a Hermitian manifold $M$. The Diederich-Fornaess index is the supremum of all exponents $0 < \eta < 1$ such that $-(-\rho)^{\eta}$ is strictly plurisubharmonic on $\Omega$ for some $C^2$ defining function $\rho$. This index is known to have many applications to the study of regularity properties of the Bergman Projection. It is believed to be a biholomorphic invariant, so it should not depend on the geometry of the ambient manifold. However, there are some surprising connections between the Diederich-Fornaess Index and the existence of metrics with certain properties, which we will discuss in this talk.