

THE DEPARTMENT OF MATHEMATICAL SCIENCES

Indiana University - Purdue University Fort Wayne

is pleased to present

Dusty Grundmeier

University of Michigan

Hilbert Functions and Positivity Conditions in Complex Analysis

Abstract

In this talk, I will give some applications of commutative algebra to the study of positivity conditions in complex analysis. In particular, given a bihomogeneous polynomial $r(z, \bar{z})$ on $\mathbb{C}^n \times \mathbb{C}^n$ for which $r(z, \bar{z})\|z\|^{2d} = \|h(z)\|^2$ for some holomorphic polynomial $h = (h_1, \dots, h_k)$, we use Hilbert functions to study the relationship between d , n , k , and the signature of r . I will also describe how this situation arises in CR geometry. This is joint work with Jennifer Halfpap.

3:30 – 4:20, Wednesday, April 16, 2014.

Location: KT 216

<http://ipfw.edu/departments/coas/depts/math/news/seminars.html>