Mathematics, Statistics, and Computer Science **@ UIC**

Algebraic Geometry Seminar

Nonexistence of exceptional bundles on P^3 with maximal possible ranks

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Abstract: Vector bundles E with Hom*(E, E)=C are called exceptional, and they play an important role in the study of derived categories and stable sheaves. Unlike P^1 and P^2, classifying exceptional bundles on P^3 is a challenging problem. In this talk we introduce new techniques to approach this problem, by studying stable spherical bundles on quartic surfaces. We show the first nonexistence results: there is no exceptional bundle on P^3 with degree d and maximal possible rank 2d^2+1 when |d|>3. We will also discuss many future developments of this program.

Monday, October 16 at 3:00 PM in 636 SEO