

Queen's Algebraic Geometry — Seminar —

FITTING POINTS IN HYPERPLANES

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Abstract

Given a reduced finite set of points $\Gamma \subset \mathbb{P}^n$, we investigate what is $hyp(\Gamma)$, the maximum number of points of Γ contained in any hyperplane. Finding this number is strongly related to the computation of the minimum distance of linear codes. If $char(k) = 0$, I'll present a lower bound for $|\Gamma| - hyp(\Gamma)$ in terms of the minimum socle degree of $k[x_0, \dots, x_n]/\bar{I}$, where \bar{I} is the Artinian reduction of the ideal of Γ . I'll give a class of examples due to Juan Migliore, where the lower bound is attained. In the last part of the talk I'll discuss the joint project with Adam Van Tuyl about generalizing the above lower bound to fat points and to arbitrary characteristic of the ground field.

Monday 24 January 2011
16:30 – 17:30
319 Jeffery Hall