

Queen's Algebraic Geometry — Seminar —

GEOMETRY OF CURVES WITH EXCEPTIONAL SECANT PLANES

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Abstract

We study curves with linear series that are exceptional with regard to their secant planes. Working in the framework of an extension of Brill-Noether theory to pairs of linear series, we prove that a general curve of genus g has no exceptional secant planes, in a very precise sense. We also address the problem of computing the number of linear series with exceptional secant planes in a one-parameter family in terms of tautological classes associated with the family. We obtain conjectural generating functions for the tautological coefficients of secant-plane formulas associated to series g_m^{2d-1} that admit d -secant $(d-2)$ -planes. We also describe a strategy for computing the classes of divisors associated to exceptional secant plane behavior in the Picard group of the moduli space of curves in a couple of naturally-arising infinite families of cases, and we give a formula for the number of linear series with exceptional secant planes on a general curve equipped with a one-dimensional family of linear series.

Monday, October 15, 2007
4:30pm – 5:30pm
319 Jeffery Hall