

Algebraic Geometry Seminar

Non-rational Hypersurfaces

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Abstract: When can you write down the general solution to a polynomial equation in a way that gives you each solution only once? Algebraic geometers know that this condition corresponds to rationality of the corresponding hypersurface. It is an easy fact that a smooth hypersurface of degree at least two more than its dimension cannot be uniruled, and in particular, cannot be rational. Improving on this result, János Kollár proved using reduction to positive characteristic that a very general hypersurface of degree greater than approximately two thirds its dimension is not rational. We will discuss recent work with Eric Riedl which extends this to hypersurfaces of degree greater than approximately half their dimension and certain singular hypersurfaces.

Wednesday, September 17 at 4:00 PM in SEO 427