Northeastern University  Mathematics Department

Geometry, Physics, and Representation Theory Seminar

Luca Schaffler

University of Massachusetts, Amherst

Thursday, April 5, 2:50-3:50 pm, Lake Hall 509

Equations for point configurations to lie on a rational normal curve

Abstract

Abstract: Let $V_{d,n} \subseteq (\mathbb{P}^d)^n$ be the Zariski closure of the set of n-tuples of points lying on a rational normal curve. The variety $V_{d,n}$ was introduced because it provides interesting birational models of $\overline{M}_{0,n}$: namely, the GIT quotients $V_{d,n} /\!\!/ SL_{d+1}$. In this talk our goal is to find the defining equations of $V_{d,n}$. In the case $d = 2$ we have a complete answer. For twisted cubics, we use the Gale transform to find equations defining $V_{3,n}$ union the locus of degenerate point configurations. We prove a similar result for $d \geq 4$ and $n = d + 4$. This is joint work with Alessio Caminata, Noah Giansiracusa, and Han-Bom Moon.