

1120-13-250

Eliana M Duarte*, emduart2@illinois.edu, and **Hal Schenck**. *Syzygies and tensor product surfaces.*

The use of syzygies to compute implicit equations of parameterized surfaces has become an important tool for applications in computer graphics. One type of surface that is common in this setting is the closure of the image of a rational map $\phi : \mathbb{P}^1 \times \mathbb{P}^1 \rightarrow \mathbb{P}^3$, also known as a tensor product surface. In the first part of this talk I will explain how the syzygies of the defining polynomials of ϕ determine the implicit equation of the closure of the image. For the second part I will present recent progress on understanding the structure of the syzygies that determine the implicit equation for the case that the base locus of ϕ is a generic set of points in $\mathbb{P}^1 \times \mathbb{P}^1$. (Received February 22, 2016)