1126-13-194　　　　　**Eliana M Duarte*** (`emduart2@illinois.edu`), Department of Mathematics, 1409 W Green St, Urbana, IL 61801. *Syzygies and Tensor product surfaces.*

A tensor product surface is the image of a map $\lambda : \mathbb{P}^1 \times \mathbb{P}^1 \to \mathbb{P}^3$, such surfaces arise in geometric modeling and in this context it is important to know their implicit equation. Currently, syzygies are one of the main tools to find implicit equations of parameterized curves and surfaces. In this talk I will overview the main techniques to find implicit equations of tensor product surfaces using syzygies. Additionally, I will present recent results on the structure of the syzygies that determine the implicit equation for tensor product surfaces. It turns out that for tensor product surfaces with basepoints the degree of the syzygies that determine the implicit equations is directly related to the geometry of the base locus of λ. (Received January 13, 2017)