

1048-14-53

**Luis D Garcia-Puente\*** (lgarcia@shsu.edu), Department of Mathematics and Statistics, Sam Houston State University, Huntsville, TX 77341-2206, and **Gheorghe Craciun** (craciun@math.wisc.edu) and **Frank Sottile** (sottile@math.tamu.edu). *Injectivity of toric patches.*

In this talk, we will present an application of algebraic geometry to geometric modeling. We apply methods from toric geometry to investigate the self-intersection, or injectivity of a toric patch (a generalization of the classical Bézier patches). We give a simple and easy-to verify condition on a set of control points which implies that the resulting patch has no self-intersection, for any choice of weights. This uses Craciun and Feinberg's injectivity theorem from the theory of chemical reaction networks. (Received January 16, 2009)