

1104-14-315

**Eric M Hanson\*** ([hanson@math.colostate.edu](mailto:hanson@math.colostate.edu)), Department of Mathematics, 1874 Campus Delivery, Fort Collins, CO 80523-1874. *On Numerical Algebraic Geometry and Topological Neighborhoods of Spline Curves.*

Let  $V$  be an algebraic variety. A *doubly normal segment* to  $V$  is a line segment connecting two points on  $V$  such that the segment is normal to  $V$  at both of these points. These segments can be used to define a tubular neighborhood of the variety which is often useful in understanding the topology of  $V$  or perturbations of  $V$ . In particular, when spline curves are used for visualization it is useful to know a neighborhood of the curve in which specified movements preserve the topology. The tools of numerical algebraic geometry can be used to compute the endpoints of these doubly normal segments. This talk will focus on the specific case of applying these techniques to cubic spline curves. (Received September 03, 2014)