

**Meeting:** 1004, Bowling Green, Kentucky, SS 4A, Special Session on Knot Theory and Its Applications

1004-57-59            **Elizabeth Denne\*** ([denne@math.harvard.edu](mailto:denne@math.harvard.edu)), Department of Mathematics, Harvard University, 1 Oxford St, Cambridge, MA 02138, and **John M Sullivan** ([sullivan@math.tu-berlin.de](mailto:sullivan@math.tu-berlin.de)), Institut für Mathematik, TU-Berlin, Str. des 17 Juni, 136, D-10623 Berlin, Germany. *The Distortion of a Knotted Curve.*

The distortion of a curve measures the maximum arc/chord length ratio. Gromov showed any closed curve has distortion at least  $\pi/2$  and asked about the distortion of knots. Here, we use the existence of an essential secant to show that any nontrivial knot of finite total curvature in space has distortion at least 3.9945; examples show that distortion under 8.2 suffices to build a trefoil knot. (Received January 14, 2005)