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Chalani Prematilake* (chalani.prematilake@ttu.edu), Texas Tech University, Department of Mathematics and Statistics, Box 41042, Lubbock, TX 79409-1042, and **Leif Ellingson** (leif.ellingson@ttu.edu), Texas Tech University, Department of Mathematics and Statistics, Box 41042, Lubbock, TX 79409-1042. *Prediction of Lower Bounds for the Number of Sampling Points for Approximating Shapes of Planar Contours*. Preliminary report.

This talk is concerned about finding a lower bound for the number of sampling points for approximating similarity shapes of planar contours. Contours in this context may be thought of as the ranges of simple closed curves. While contours are by their very nature infinite-dimensional, in order for computations to be performed with digital images, discretization is unavoidable and results in some amount of approximation error. To aid in the quantification of this error, we use a polygonal approximation for the contours by evaluating the contours at k times. We explore a model for determining a rough lower bound for k based on curvature and illustrate these methods using some examples. (Received February 09, 2014)