

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

1004-57-217            **Kenneth C. Millett\*** ([millett@math.ucsb.edu](mailto:millett@math.ucsb.edu)), Department of Mathematics, UCSB, Santa Barbara, CA 93106. *How many knots are enough?*

This question concerns the goal of estimating the number of distinct knot types and their proportion in the space of equilateral polygonal knots with a fixed number of edges. While, for small numbers of edges there is information due to Calvo and others, for larger numbers of edges only rough estimates are available for the number of knot types. Since many of these estimates derive from Monte Carlo explorations of the knot space and an analysis using the HOMFLY polynomial as a replacement for the knot type, one is interested in knowing how many sample knots are sufficient to give a good estimate of the finite number of knot types, are reflected in the HOMFLY polynomials, and the relative proportion within the given knot space.

Theoretical and experimental results concerning this question will be presented. (Received January 25, 2005)