1078-82-139 **E J Janse van Rensburg*** (`rensburg@yorku.ca`), EJ Janse van Rensburg, Toronto, Ontario M3J 1P#, Canada. *Knotted lattice polygons.*

Polygons in the cubic lattice are simple closed curves in three space and have well-defined knot types. The number of lattice polygons of length n and knot type K in the cubic lattice is $p_n(K)$, where we consider two polygons to be equivalent under translations in the lattice. For example, if K is the unknot $\emptyset$, then $p_4(\emptyset) = 3$, $p_6(\emptyset) = 22$, $p_8(\emptyset) = 207$ and so on. Determining $p_n(K)$ for arbitrary n and knot types K is a difficult numerical problem, but the GAS-algorithm implemented with BFACF-style elementary moves can be used for approximate enumeration of $p_n(K)$, and also to sieve minimal length knotted polygons. In this talk I shall present and review some entropic and other properties of minimal length lattice polygons obtained by an implementation of the GAS-algorithm in the cubic, fcc and bcc lattices.

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