Title: Fitting a Lattice Polygon Model to Experimental DNA results

The research presented here models randomly cyclized DNA using self-avoiding polygons in the simple cubic lattice with simple energetic terms. The goal of this research is to find model parameters which best fits experimental DNA knotting data - e.g. those obtained by Shaw and Wang (Science, 1993) - for differing polygon lengths. Finding these best fit parameters is a challenge, as one can only estimate how well a particular model fits using simulations. One approach to tackle this challenge involves using a stochastic optimization method called Finite Differences Stochastic Approximation.