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Isabel K. Darcy* (idadarcy@math.uiowa.edu). *Solving n-string tangle equations modeling protein-DNA complexes.*

An n-string tangle consists of n strings properly embedded in a 3-dimensional ball. Protein-DNA complexes have been modeled using tangles. The protein complex is modeled by the 3-dimensional ball while DNA segments bound by the protein are thought of as strings embedded in the protein "ball".

We will review how certain experimental results have been modeled by a system of n-string tangle equations. One can determine the topological shape of DNA bound within a protein complex by solving these n-string tangle equations. We will discuss some methods for solving n-string tangle equations with a focus on finding small solutions. (Received August 28, 2006)