KAORI KITAO LECTURE 2024

Candice Price
Smith College

The Tangle Model: An Application of Topology to Biology

The tangle model was developed in the 1980s by professors DeWitt Sumner and Claus Ernst. This model uses the mathematics of tangles to model protein-DNA binding. An n-string tangle is a pair (B,t) where B is a 3-dimensional ball and t is a collection of n non-intersecting curves properly embedded in B. N-string tangles are formed by placing 2n points on the boundary of B and attaching n non-intersecting curves inside B. Tangles, like knots and links, are studied through their diagrams. In the tangle model for DNA site-specific recombination, one is required to solve simultaneous equations for unknown tangles which are summands of observed DNA knots and links. This discussion will give a review of the tangle model including definitions.

Chang Hou Hall (Sci 101)
4:15pm Refreshments
4:30pm Lecture

Tuesday, October 29

Swarthmore College
Mathematics & Statistics Department