998-92-343   **Mariel Vazquez*** (`mariel@math.berkeley.edu`), University of California at Berkeley, Mathematics Department, 970 Evans Hall, Berkeley, CA 94720-3840. *Enzymes that change the topology of DNA.*

DNA topology is the study of geometrical (supercoiling) and topological (knotting) properties of DNA loops and circular DNA molecules. Virtually every reaction involving DNA is influenced by DNA topology, or has topological effects. Site-specific recombinases and topoisomerases are enzymes able to change the topology of circular DNA by breaking the DNA and introducing one or more crossing changes. In this talk I will discuss mathematical and computational analyses of knotting and unknotting reactions performed by these enzymes. (Received March 02, 2004)