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Candice R Price* (candice.price@usma.edu) and **Isabel K Darcy**. *Application of a Skein Relation to Difference Topology Experiments*. Preliminary report.

Difference topology is a technique used to study any protein that can stably bind to DNA. This technique is used to determine the confirmation of the DNA bound by the protein. Motivated by difference topology experiments, this talk utilizes a skein relation to model the local action of topoisomerase and site specific recombinase. This skein relation relates three knots, K_+ , K_- , K_I and one link, K_D where K_+ as an oriented knot with a distinguished positive crossing; K_- , a knot obtained by changing the distinguished positive crossing of K_+ to a negative crossing; K_I , a knot obtained by the non-oriented resolution of the distinguished crossing of K_{\pm} ; and, K_D is a link obtained by the orientation preserving resolution of the distinguished crossing. (Received September 02, 2014)