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Allison H Moore* (amoore@math.ucdavis.edu), Davis, CA. *Site-specific recombination and the band surgery model*. Preliminary report.

Site-specific recombinases mediate DNA recombination at sites that are directly or inversely repeated. We model circular DNA as knots or links. In this context, site-specific recombination is modeled as band surgery, a topological operation that transforms a knot into a new knot or link. We will discuss the differences in this model when the sites are directly or inversely repeated, and mention some recent work in the latter case. In particular, we will state some topological obstructions to the existence of non-coherent band surgeries relating pairs of knots and report on the outcome of numerical simulations of non-coherent band surgery along knots in the cubic lattice. Parts of this work are joint with Flanner and Vazquez. (Received August 14, 2018)