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Louis H. Kauffman* (kauffman@uic.edu), Math UIC, 851 South Morgan Street, Chicago, IL 60607-7045, **Dan Sandin** (dan@uic.edu), Electronic Visualization Laboratory, UIC, 842 W. Taylor Street, Room 2032, Chicago, IL 60607-7045, and **Robert Kooima** (rlk@evl.uic.edu), Electronic Visualization Laboratory, UIC, 842 W. Taylor Street, Room 2032, Chicago, IL 60607-7045. *Explorations in Knot Self-Repulsion.*

This talk will discuss phenomena in computer modeling of knot self-repulsion by force laws of the form $F = kr^{-s}$ for varying values of s and different configurations of joints and springs between vertex points in the piecewise linear representation of the knot. These phenomena include transitions from non-minimal and semi-stable forms to minimal energy forms of the knots and behaviour for different values of s (above). In particular, we find values of s for which the knot tends to tighten into an apparently ideal knot form localized on a long length of string. Comparisons with ideal knot parameters will be discussed. (Received August 15, 2006)