1116-54-2642 **Eleni Panagiotou*** (`panagiotou@math.ucsb.edu`), South Hall, Room 6523, Department of Mathematics, Santa Barbara, CA 93106-3080, and **Ken Millett**. *Quantifying entanglement for collections of chains in periodic boundary conditions models.*

Periodic Boundary Conditions (PBC) are often used for the simulation of complex physical systems of open and closed curve models, such as polymer melts or vortex fields. In such dense systems the conformational freedom and motion of a chain is significantly affected by entanglement with other chains which generates obstacles of topological origin to its movement. In this talk we will discuss methods by which one may quantify and extract entanglement information from a physical system using tools from knot theory. We use the Gauss linking number and the periodic linking number to measure the entanglement of a collection of oriented curves in a system employing PBC. (Received September 22, 2015)