1041-82-280 **Chris Soteros*** (soteros@math.usask.ca), 106 Wiggins Road, Saskatoon, SK S7N 5E6, Canada.

Entanglement Complexity of Systems of Self-Avoiding Walks in Lattice Tubes. Preliminary report.

Soteros, Sumners and Whittington (1992) introduced the concept of a "good" measure of knot complexity. Such measures have proven useful for understanding the self-entanglement of ring polymers in dilute solution as modelled by self-avoiding polygons in $\mathbb{Z}^3$. The question of what are "good" measures for the entanglement complexity of dense polymer systems was, however, left open. In 2000, Orlandini *et al* proposed such a measure based on taking random tubular sections from the system and using linking numbers. I will present an update on our theoretical results about this measure based on Mahshid Atapour's studies of systems of undirected self-avoiding walks confined to infinite rectangular tubes in $\mathbb{Z}^3$. We obtain results on how the entanglement complexity changes with the number of edges, number of walks, and the "span" of the system of self-avoiding walks. (Received August 12, 2008)