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Christine E Soteris* (soteris@math.usask.ca), Department of Mathematics and Statistics, University of Saskatchewan, 106 Wiggins Rd, Saskatoon, SK S7N 5E6, Canada. *Entanglement Complexity of Systems of Self-Avoiding Walks in Lattice Tubes*. Preliminary report.

Soteris, 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. In this talk, this measure is explored theoretically by studying the entanglement complexity of a system of self-avoiding walks confined to an infinite rectangular tube in \mathbb{Z}^3 . This is work with PhD student Mahshid Atapour. (Received September 10, 2007)