1014-53-144   **Ted Ashton*** (`ashted@uga.edu`), Department of Mathematics, University of Georgia, Athens, GA 30602. *On the Structure of Tight Knots.* Preliminary report.

Almost anyone can tie a knot in a rope and pull it tight, but no one can say precisely what shape that knot is. We present new results from our exploration into that question.

Mathematically, a *thick knot* is an embedded tube of constant *thickness* (diameter) centered on a curve in 3-space. The quotient of the curve's length and its thickness is its *ropelength*, and minimal-ropelength knots are called *tight*. Our results add to the current understanding of the structure of tight knots. (Received August 02, 2005)