1050-57-160　　　　**Lee Rudolph*** (`lrudolph@black.clarku.eud`), 950 Main Street, Worcester, MA 01610, and **Li Han**. *Planning Regular Homotopies of Planar Loops with Revolute Joints.* Preliminary report.

In recent work with Clark University undergraduate students Sam Dorsey-Gordon '09, Dylan Glotzer '11, Dan Menard '09, Jon Moran '10 and James R. Wilson '09, we used triangle-based parameters for configurations of a planar loop $\mathcal{L}$ with revolute joints (equivalently, a planar polygon with edges of fixed length) to give an efficient description of the bending and kissing loci in the configuration space of $\mathcal{L}$, which includes the self-contact subspace of $\mathcal{L}$ (generally as a strict subset). Using that work as a framework, we indicate how to develop procedures for planning regular homotopies of $\mathcal{L}$. (Received March 03, 2009)