

A bending twist model for inextensible curves

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In pursuit of modeling springy wires we study framed curves, assuming that their evolution is driven by a linear combination of bending energy and twisting energy. The latter tracks the rotation of the frame about the centerline of the curve.

In order to incorporate impermeability which precludes topology changes throughout the evolution, we add a self avoiding term, namely the tangent point potential. We discuss the discretization of this model and present some numerical simulations.

This is a joint work with Sören Bartels.