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Douglas B. Meade* (meade@math.sc.edu), Department of Mathematics, University of South Carolina, Columbia, SC 29208. *Using Dynamic Visualization to Better Understand the Tractrix and Other “Pulling” Curves.*

The tractrix is a classic problem that is well understood from many perspectives. In this talk we revisit the classical tractrix problem as an initial value problem in phase space, and note that this perspective does not provide any information about how the curve would be traversed in time. We present different parameterizations, and discuss their physical interpretations (or lack thereof). We also present a vector-based model for the tractrix from which we can pursue related problems. A common theme found in many of these formulations is the mathematical benefits of parameterizations with respect to arclength (in one form or another). These examples also exhibit benefits of dynamic visualization in modern investigations of classical problems. (Received September 26, 2017)