

**Meeting:** 1001, Evanston, Illinois, SS 10A, Special Session on Differential Geometry

1001-58-418      **Anders Linner\*** (alinner@math.niu.edu). *Elastic energy and variable length*. Preliminary report.

Elastic curves of minimal energy, and more generally nonlinear splines, need not exist when the length is not prescribed. Additional restrictions, such as bounds on the tangent directions, may restore existence. The talk will discuss recent progress in this area. As an introduction to some of the useful techniques, it is shown that the greatest lower bound of the elastic energy increases from zero to a positive value when parameterized curves are required to be graphs. (Received August 31, 2004)