N. Kirby: The Gamma-limit of a Model for the Elastic Energy of an Inextensible Ribbon

In 1930, Sadowsky proposed the limiting form of the energy of an inextensible ribbon of negligible width. Sadowsky and subsequent authors based this limit upon taking a pointwise limit of the integrand for a ribbon with positive width, where the energy is written as an integral along the centerline of the ribbon. Subsequent to these contributions the method of gamma-convergence has matured significantly. It will be demonstrated that the Sadowsky's proposed functional is the proper gamma-limit of the energy functionals for inextensible ribbons with fixed centerline upon passing to the limit of a ribbon of negligible width.

This is joint work with E. Fried.