
Finding isometric immersions of surfaces via variational calculus

FRANZ PEDIT

We will discuss a variational problem with parameters whose minimizers are isometric immersions of a given Riemannian surface in 3-space. One of the parameters controls the Willmore energy, which can be used as a regularizer preventing excessive creasing/crumpling of the resulting isometric image in 3-space of the abstract surface. The exposition will be augmented by numerous images of isometrically immersed surfaces produced by a numerical algorithm based on our theory.

University of Massachusetts, Amherst, USA