The geometry of embeddings

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In pursuit of finding "optimal" embeddings of curves and surfaces with prescribed topology, one may study repulsive functionals such as the tangent-point potential. Analytical and numerical challenges result from the highly nonlinear and nonlocal nature of these objects.

Local minimizers can be approximated by considering various gradient flows. The choice of an appropriate metric is crucial both for performance and stability.

In this talk I will outline some recent results which will be illustrated by a few numerical examples.