Fair curve networks and their applications

Johannes Wallner[1] <wallner@geometrie.tuwien.ac.at>

Minimizers of a quadratic fairness functional play an important role in computer-aided geometric design and approximation theory, particular in their manifestation as spline functions, spline curves, and spline surfaces. In Differential geometry, the most prominent energy minimizers are the geodesic lines. This presentation is mainly concerned with energy-minimizing curve networks in nonlinear geometries, their differential properties, and their applications in geometric design and geometry processing (remeshing, smoothing elevation data . . .).

[1] J. Wallner, H. Pottmann, M. Hofer: *Fair curve networks in nonlinear geometries*, ACM SIG-GRAPH 2005 Conference Abstracts and Applications, August 2005, to appear. URL http://dmg.tuwien.ac.at/wallner/fwsketch.pdf

[2] J. Wallner, H. Pottmann, M. Hofer: *Fair webs*, Geometry Preprint 134, TU Wien. URL http://dmg.tuwien.ac.at/wallner/fairwebs.pdf

---

[1]TU Wien