

1046-97-2091 **David gu*** (gu@cs.sunysb.edu), Computer Science Department, SUNY at Stony Brook, Stony Brook, NY 11794-4400, and **Feng Luo** (fluo@math.rutgers.edu), Department of Mathematics, Rutgers University, Piscataway, NJ 08854. *Discrete curvature flows and their applications*, II. Preliminary report.

This presentation introduces the concepts, theories and algorithms of discrete curvature flows for surfaces with arbitrary topologies, including discrete Ricci flow and Yamabe flow. Discrete curvature flow for hyperbolic 3-manifolds with geodesic boundaries is also presented.

Curvature flow method can be used to design Riemannian metrics by prescribed curvatures, and applied for parameterization in graphics, shape registration in computer vision, brain mapping in medical imaging, spline construction in computer aided geometric design, and many other engineering fields. (Received September 17, 2008)