Meeting: 1003, Atlanta, Georgia, SS 36A, AMS-SIAM Special Session on Mathematical Image Processing, I

1003-68-1140 **Xianfeng Gu*** (gu@cs.sunysb.edu), 1707A Quentin Place, Coram, NY 11727. *Computational Conformal Geometry applied in Computer Graphics, Vision and Medical Imaging.*

Riemann surface has been a central concept in mathematics for centruries. Recent research make this abstract subject computable to engineers.

This paper introduces practical algorithms to compute conformal structures of general surfaces, and apply the concepts and results in Riemann surface theory to computer graphics, computer vision and medical imaging fields. The applications include surface parameterization, texture mapping, mesh generation, surface classification, manifold spline and brain mapping. (Received October 04, 2004)