1078-53-2 **Peter Schröder***, ps@cs.caltech.edu. *Conformal editing of surface meshes.*

In geometric modeling we aim to shape a surface so as to achieve a desired form. Such deformations can be quite general and preserve more or less of any existing structure. For example, in many computer graphics applications the surface is decorated with a texture which should distort gracefully along with the deformation of the surface. To achieve this we consider the class of conformal deformations, i.e., deformations which are locally rotations and uniform scales only (no unsightly shearing allowed). In this talk I will describe an approach to conformal deformations which is the first to require only the solution of a linear problem. It is based on a first order linear integrability condition which leads to sparse linear systems and computationally very attractive algorithms. (Received November 29, 2011)