

1137-53-227

Ren Guo* (guoren@oregonstate.edu). *Discrete conformal geometry of polyhedral surfaces.*

A polyhedral surface is a topological surface with constant curvature metric everywhere except at finite many points. On such a surface, discrete conformal geometry studies the relationship between some discrete metrics and curvatures, including metrics of inversive distance circle packing, combinatorial Yamabe flow and virtual radius circle packing. The background geometry on a polyhedral surface can be Euclidean, hyperbolic or spherical. All cases can be unified under one framework using variational principles. They also closely connect to the volume of hyperbolic polyhedra and the theory of Teichmüller space. (Received February 04, 2018)