Discrete uniformization and ideal cone-manifolds

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Conformal geometry studies Riemannian metrics up to conformal equivalence, i.e., determining the same angle structure. One of the cornerstones of 2-dimensional differential geometry is the Uniformization Theorem that can be stated as follows: in each conformal class on a closed surface there exists a metric of constant curvature (which is unique after a normalization).
There is a research directed towards understanding, which functions can serve as the Gaussian curvature of a metric in a given conformal class.

There are several approaches how can one discretize the notion of conformality. We will work in the setting proposed by Gu, Guo, Luo, Sun, Wu (extending an earlier work of Bobenko, Pinkall and Springborn). In particular, they investigated how can one prescribe curvature to hyperbolic cone-metrics on surfaces in a given discrete conformal class.
I will speak how this problem can be solved with the help of analyzing the curvature of ideal hyperbolic cone-3-manifolds.