DEFORMATION THEORY OF CONSTANT CURVATURE CONICAL METRICS

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In this joint work with Rafe Mazzeo, we would like to understand the deformation theory of constant curvature metrics with prescribed conical singularities on a compact Riemann surface. We construct a resolution of the configuration space, and prove a new regularity result that the family of constant curvature conical metrics has a nice compactification as the cone points coalesce. This is one key ingredient to understand the full moduli space of such metrics with positive curvature and cone angles bigger than 2π.