

# THE DEFORMATION THEORY OF CONSTANT CURVATURE CONICAL METRICS

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We would like to understand the deformation theory of constant curvature metrics with prescribed conical singularities on a compact Riemann surface. In the positive curvature case, when some or all of the cone angles are bigger than  $2\pi$ , the analysis is much more complicated than the small angle case. We discover that one key ingredient of the obstructed deformation is related to splitting of cone points, which indicates that the moduli space of constant curvature conical metrics is highly stratified. 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 joint work with Rafe Mazzeo.