Volume Renormalization for Singular Yamabe Metrics

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Abstract

Singular Yamabe metrics, originally introduced by Loewner-Nirenberg, have seen a resurgence of interest lately, due partially to their role as developed by Gover-Waldron as a tool for studying the geometry of a hypersurface in a conformal manifold. This talk will describe renormalization of the volume of a singular Yamabe metric, generalizing volume renormalization for Poincare-Einstein metrics. Recent joint work with Matt Gursky concerning a generalized Chern-Gauss-Bonnet formula for singular Yamabe metrics in dimension 4 will be mentioned.