

Renormalized volume on the Teichmüller space of punctured surfaces

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Abstract. We define and study the renormalized volume for geometrically finite hyperbolic 3-manifolds, including those with rank-1 cusps. We prove a variation formula, and show that for certain families of convex co-compact hyperbolic metrics g_ε degenerating to a geometrically finite hyperbolic metric g_0 with rank-1 cusps, the renormalized volume converges to the renormalized volume of the limiting metric.

Mathematics Subject Classification (2010): 51M10 (primary); 53A30, 58J32 (secondary).