

Prescribed Ricci curvature on a solid torus

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We will discuss the prescribed Ricci curvature equation $\text{Ric}(G) = T$ on a solid torus \mathcal{T} under natural boundary conditions. The unknown G here is a Riemannian metric. The letter T in the right-hand side denotes a $(0,2)$ -tensor on \mathcal{T} . We will assume T is nondegenerate (in fact, even a lighter assumption would suffice). Our goal will then be to settle the questions of the existence and the uniqueness of solutions in the class of rotationally symmetric Riemannian metrics on a neighborhood of the boundary of \mathcal{T} .