

HEAT CONTENT AND HARDY INEQUALITY FOR COMPLETE RIEMANNIAN MANIFOLDS

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Upper bounds are obtained for the heat content of an open set D in a complete Riemannian manifold, provided the Dirichlet Laplace Beltrami operator satisfies a strong Hardy inequality, and the distance function on D satisfies an integrability condition. The upper bounds are sharp for a wide class of Riemannian manifolds with non negative Ricci curvature.