

The entropic curvature-dimension condition and Bochner's inequality

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Abstract. We show the equivalence of the curvature-dimension bounds of Lott-Sturm-Villani (via entropy and optimal transport) and of Bakry-Émery (via energy and Γ_2 -calculus) in complete generality for infinitesimally Hilbertian metric measure spaces. In particular, we establish the full Bochner inequality on such metric measure spaces. Moreover, we deduce new contraction bounds for the heat flow on Riemannian manifolds and on mms in terms of the L^2 -Wasserstein distance.