On spectral bounds for symmetric Markov chains with coarse Ricci curvatures

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Abstract. We prove an upper estimate of spectral radius for (non-linear) transition operator P over L^p-maps in the framework of symmetric Markov chains on a Polish space with positive lower bound of n-step coarse Ricci curvatures. The target space is a complete separable 2-uniformly convex space with some geometric conditions including the case of CAT(0)-spaces. As consequences, strong L^p-Liouville property for P-harmonic maps, a global Poincaré inequality (spectral gaps) for energy functional over L^2-maps (or functions), and spectral bounds of L^2-generator of Markov chains are presented. This is a joint work with Eiki Kokubo, who was my previous student in master course of Kumamoto University.