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Some Geometric Criteria for L^2 Sobolev/Nash/Log-Sobolev Inequalities on Complete Noncompact Riemannian Manifolds

In this talk we will discuss certain generic and optimal geometric criteria for the mutually interacted Sobolev, Nash, logarithmic Sobolev inequalities of L^2 type on $3 \leq n$ -dimensional, complete, non-compact, Riemannian manifolds. More attention is paid on those aspects connecting the volumes and the Green's functions of regular bounded open subsets of the manifolds.