A PARABOLIC REGULARIZATION PROPERTY
OF \textit{p–LOGARITHMIC SOBOLEV GENERATORS}

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**Abstract.** Let \( N \) be a Riemannian manifold, \( M \subset N \) be a domain with smooth boundary, \( \mu \) a positive measure on \( M \) such that \( M \) has unit \( \mu \)–volume. Consider the evolution driven by the \( p–\text{Laplace–type operator (} p > 2 \text{)} \) associated to the natural \( p–\text{energy functional} \) \( E^{(p)} \) constructed from \( \mu \), homogeneous Dirichlet boundary conditions on \( \partial M \) being assumed. Assume that a single suitable logarithmic inequality holds for \( E^{(p)} \). Then we show that the evolution brings any data belonging to the natural domain of the evolution instantaneously into \( L^q \) for any \( q > 2 \), with quantitative bounds on the \( L^q \) norms.

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