MODIFIED LOGARITHMIC SOBOLEV INEQUALITIES AND TRANSPORTATION COST INEQUALITIES IN EUCLIDEAN SPACE

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Abstract: In this talk, the modified logarithmic Sobolev inequalities and transportation cost inequalities for measures with density e^{-V} in $\mathbb{R}^n$ are established. It is proved by using Prékopa-Leindler inequalities following the idea of Bobkov-Ledoux, but a different type of condition is used which recovers Bakry-Emery criterion. As an application, we establish the modified log-Sobolev and transportation cost inequalities for the Gaussian type measures $e^{-|x|^p}\mathrm{d}x$ for $p > 1$ in $\mathbb{R}^n$. We also give out explicit estimates for their constants.