

Aronson-B\'enilan estimates for weighted porous medium equations under the geometric flow

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Abstract

In this paper, we study Aronson-B\'enilan gradient estimates for positive solutions of weighted porous medium equations $\partial_t u(x,t) = \Delta_\phi u^p(x,t)$ in $M \times [0,T]$ coupled with the geometric flow $\frac{\partial}{\partial t} g_{ij} = 2h(t)g_{ij}$ on a complete measure space $(M^n, g, e^{-\phi} dv)$. As an application, by integrating the gradient estimates, we derive the corresponding Harnack inequalities.

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