

An equation linking W -entropy with reduced volume

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Abstract: W -entropy and reduced volume for Ricci flow were introduced by Perelman, which had proved their importance in the study of Ricci flow. Lei Ni studied the analogous concepts for heat equation on static manifolds, and proved an equation, which links the large timebehavior of these two. Due to the surprising similarity between those concepts in the Ricci flow and the linear heat equation, a natural question whether such equation holds for the Ricci flow ancient solution was asked by Lei Ni. In this talk, we show a proof of Lei Ni's equation based on a new method. And following the same philosophy of this method, we answer Lei Ni's question positively for type I k -solutions of Ricci flow.