

Instantaneous blow-up for heat equations

JERRY GOLDSTEIN

U of Memphis

Of concern is the existence of nontrivial positive solutions of $du/dt = Lu + V(x)u$, where L is a second order symmetric elliptic operator and the potential function V has singularities. In many cases there are sharp borderlines between good and bad behavior. The main cases are: x in R^n and L =Laplacian [Baras-Goldstein], the analogous problem on the Heisenberg group [Goldstein-Zhang], L uniformly elliptic but with bad coefficients [Goldstein-Zhang], and V highly oscillatory [Goldstein-Kombe-Zhang].