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Global and Blowup Solutions for Quasilinear Parabolic Equations Not in Divergence Form

In this talk, we will discuss global and blowup solutions of the quasilinear parabolic equation $u_t = \alpha(x, u, \nabla u)\Delta u + f(x, u, \nabla u)$ with homogeneous Dirichlet boundary conditions. We will give sufficient conditions such that the solutions either exist globally or blow up in a finite time for any smooth initial values. In special cases, a necessary and sufficient condition for global existence is given.