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10027. *Small Perturbation Solutions for Parabolic Equations.*

Let φ be a smooth solution of the parabolic equation $F(D^2u, Du, u, x, t) - u_t = 0$. Assume that F is smooth and uniformly elliptic only in a neighborhood of the points $(D^2\varphi, D\varphi, \varphi, x, t)$, we show that a viscosity solution u to the above equation is smooth in the interior if u is sufficiently close to φ in L^∞ -norm. In the proof, we introduce the concept of parabolic balls which seems more convenient in performing covering arguments for parabolic equations. (Received September 05, 2012)