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A unique continuation result for parabolic operators

Let $P = \partial_t + \partial_i(a^{ij}\partial_j)$ be a backward parabolic operator. It is shown that under certain conditions on $\{a^{ij}\}$, if u satisfies $|Pu| \leq C(|u| + |\nabla u|)$, $|u(x, t)| \lesssim e^{C|x|^2}$ in $\mathbb{R}^n \times [0, T]$ and $|u(x, 0)| \lesssim e^{-M|x|^2}$ for all $M > 0$, then u vanishes identically in $\mathbb{R}^n \times [0, T]$.