1057-35-121 **Phuc Cong Nguyen*** (pcnguyen@math.lsu.edu), Department of Mathematics, Louisiana State University, 303 Lockett Hall, Baton Rouge, LA 70803. *Quasilinear Riccati type equations with super-critical growth in the gradient.*

We establish explicit criteria of solvability for the quasilinear Riccati type equation $-\Delta_p u = |\nabla u|^q + \omega$ in a bounded $\mathcal{C}^1$ domain $\Omega \subset \mathbb{R}^n$, $n \geq 2$. Here Δ_p, $p > 1$, is the p-Laplacian, q is in the supper critical range $q > p$, and the datum ω is a measure. Our existence criteria are given in the form of potential theoretic or geometric (capacitary) estimates that are sharp when ω is compactly supported in the ground domain Ω. A key in our approach to this problem is capacitary inequalities for certain nonlinear singular operators arising from the p-Laplacian. (Received January 16, 2010)