1015-35-312 **Eric T Sawyer*** (sawyer@mcmaster.ca), Department of Mathematics and Statistics, McMaster University, Hamilton, Ontario L8s 4K1. *Regularity for certain subelliptic Monge-Ampére equations.*

Let $u \in C^{1,1}(\Omega)$ be a convex solution to the generalized Monge-Ampére equation, $\det D^2 u = k(x,u,Du)$ with k smooth $\approx \left(|x_1|^{2m} + \psi(x_1,\mathbf{x})\right) K(x,u,Du)$, where $K > 0, \psi \geq 0$ are smooth and $\psi^{\frac{1}{2m}}$ Lipschitz. **Conjecture**: If $d = \det\left[\frac{\partial^2 u}{\partial x_i \partial x_j}\right]_{i,j=2}^{n} > 0$, then $u \in C^{\infty}(\Omega)$.

P. Guan proved the conjecture in dimension $n = 2$ using the classical partial Legendre transform. Subsequently, C. Rios, E. Sawyer and R. L. Wheeden generalized the partial Legendre transform to higher dimensions, and in dimension $n \geq 3$, used it to establish the conjecture under the additional regularity assumption $u \in C^{2,1}(\Omega)$. Here we relax the $C^{2,1}$ assumption to $u \in W^{3,q}(\Omega)$, $q >$ *subelliptic dimension*, and in the special case $\psi \equiv 0$, $u \in W^{3,2}(\Omega) \cap C^2(\Omega)$. This is part of ongoing work with C. Rios and R.L. Wheeden. (Received February 07, 2006)