1001-35-135   **Gary M Lieberman*** (`lieb@iastate.edu`), Department of Mathematics, Iowa State University, Ames, IA 50011. *Regularity of solutions to anisotropic elliptic equations.*

We study elliptic equations modeled on

$$\sum_{i=1}^{n} D_i \left(|D_i u|^{m_i} D_i u \right) = 0$$

with $m_1, \ldots, m_n$ parameters greater than 1 and not necessarily equal. Such equations arise in the theory of nonlinear filtration. It was shown by Marcellini and by Giaquinta that such equations may have unbounded solutions, but we show that any bounded solution must be Lipschitz. (Received August 20, 2004)

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