1011-49-320 **Mikil Foss*** (`mfoss@math.unl.edu`), Department of Mathematics, Avery Hall, University of Nebraska-Lincoln, Lincoln, NE 68588-0130. *Global Lipschitz regularity of minimizers for asymptotically convex integrals.*

Suppose that $p > 2$ and $\Omega \subset \mathbb{R}^n$ with a smooth boundary. We say that a function $g \in C^2(\mathbb{R}^{N\times n};\mathbb{R})$ is asymptotically convex if for each $\varepsilon > 0$, there exists a $\sigma_\varepsilon < +\infty$ such that

$$\left\| \frac{\partial^2}{\mathbf{F}^2}\left[\|\mathbf{F}\|^p\right] - \frac{\partial^2}{\mathbf{F}^2} g(\mathbf{F}) \right\| < \varepsilon \|\mathbf{F}\|^{p-2},$$

whenever $\|\mathbf{F}\| > \sigma_\varepsilon$. M. Giaquinta & G. Modica (1986) and J. -P. Raymond (1991) established the local Lipschitz regularity for minimizers of functionals of the form

$$\mathbf{u} \mapsto \int_\Omega g(\nabla \mathbf{u}(\mathbf{x}))\, d\mathbf{x},$$

where g is asymptotically convex. It is not completely straightforward to extend this result up to the boundary of Ω, since the technique used relies on Uhlenbeck's local regularity result for solutions to elliptic systems. I will present some global regularity results for minimizers of asymptotically convex integrals, including a global Lipschitz regularity result. (Received August 30, 2005)