Journal of Convex Analysis 09 (2002) 295–300

R. Černý
Dept. Mathematical Analysis, Charles University, Sokolovská 83, 18675 Praha 8, Czech Republic
rcerny@karlin.mff.cuni.cz

J. Malý
Dept. Mathematical Analysis, Charles University, Sokolovská 83, 18675 Praha 8, Czech Republic
maly@karlin.mff.cuni.cz

Another Counterexample to Lower Semicontinuity in Calculus of Variations

An example is shown of a functional

$$F(u) = \int_I f(u, u')\, dt$$

which is not lower semicontinuous with respect to L^1-convergence. The function f is nonnegative, continuous and strictly convex in the second variable for each $u \in \mathbb{R}^n$.

Keywords: Lower semicontinuity, convex integrals, calculus of variations.

MSC: 49J45