

Strugov, Yu. F.

On semicontinuity of some functionals. (Russian) [Zbl 0798.46027](#)

Lavrent'ev, M. M. (ed.), Mathematical analysis and discrete mathematics. Interuniversity collection of scientific works. Novosibirsk: Novosibirskij Gosudarstvennyj Universitet, 42-47 (1989).

Let D be a bounded domain in R^n . The author gives rather weak conditions on a non-negative function $L(x, u, v)$, $x \in D$, $u \in R^m$, $v \in R^n$, under which the semicontinuity property

$$\int_D L(x, f, \nabla f)^r dx \leq \liminf_{f_\nu \rightarrow f} \int_D L(x, f_\nu, \nabla f_\nu)^r dx \quad r \geq 1,$$

holds with $f_\nu \in W_1^1(D)$ and $f_\nu \rightarrow f$ locally uniformly in D . Some close assertions and corollaries are also proved.

For the entire collection see [\[Zbl 0787.00010\]](#).

Reviewer: [S.G.Samko \(Rostov-na-Donu\)](#)

MSC:

[46E35](#) Sobolev spaces and other spaces of "smooth" functions, embedding theorems, trace theorems

Keywords:

[semicontinual functionals](#); [quasiconformic mappings](#); [semicontinuity property](#)