

ASYMPTOTIC ISSUES IN THE CALCULUS OF VARIATIONS

MICHEL CHIPOT

We would like to present some results of asymptotic behaviour for problems of the calculus of variations of the type

$$(1) \quad \min_{W_0^{1,q}(\Omega_\ell)} \int_{\Omega_\ell} \mathbf{F}(\nabla v) - f v dx$$

when \mathbf{F} satisfies

$$\lambda|\xi|^q - \Lambda \leq \mathbf{F}(\xi) \leq \Lambda|\xi|^q + \Lambda \quad \forall \xi \in \mathbf{R}^n$$

and when $\Omega_\ell = \ell\omega_1 \times \omega_2$, ω_1, ω_2 bounded open sets of $\mathbf{R}^p, \mathbf{R}^{n-p}$ respectively, $\ell \rightarrow \infty$. We analyse in particular the limit of the minimizer of (1) when $\ell \rightarrow \infty$.

INSTITUTE FOR MATHEMATICS
UNIVERSITY OF ZURICH
WINTERTHURERSTRASSE 190
CH-8057 ZURICH
E-mail address, Michel Chipot: m.m.chipot@math.uzh.ch