1165-49-84 **Francesco Serra Cassano***, Francesco Serra Cassano, Dipartimento di Matematica, via Sommarive,14, 38123 Trento-Italy, 38123 Trento, Italy. *Variational convergences for integral functionals and PDE depending on vector fields.*

Given a family of locally Lipschitz vector fields $X(x) = (X_1(x), \dots, X_m(x))$ on $\mathbb{R}^n$, $m \leq n$, we will deal with the variational convergence, namely the Γ-convergence, of the following sequence of integral functionals $F_h : L^p(\Omega) \to [0, \infty]$ $(h = 1, 2, \dots)$

$$F_h(u) := \begin{cases} \int_\Omega f_h(x, Xu(x))dx & \text{if } u \in \mathbf{C}^1(\Omega) \\ \infty & L^p(\Omega) \setminus \mathbf{C}^1(\Omega) \end{cases},$$

where $\Omega \subset \mathbb{R}^n$, $m \leq n$, we will deal with the variational convergence, namely the Γ-convergence, of the following sequence of integral functionals $F_h : L^p(\Omega) \to [0, \infty]$ $(h = 1, 2, \dots)$

$$F_h(u) := \begin{cases} \int_\Omega f_h(x, Xu(x))dx & \text{if } u \in \mathbf{C}^1(\Omega) \\ \infty & L^p(\Omega) \setminus \mathbf{C}^1(\Omega) \end{cases},$$

where $\Omega \subset \mathbb{R}^n$ is bounded open and $f_h : \Omega \times \mathbb{R}^m \to [0, \infty)$ are a sequence of integrands functions.

In particular, we will study the asymptotic behaviour, as $h \to \infty$, of minimizers of functionals F_h. Moreover we will apply this study to the asymptoic behaviour of solutions of linear differential operators of the second order depending on X. This is a joint work with A. Maione (Freiburg) and A. Pinamonti (Trento). (Received January 12, 2021)