YOUNG MEASURES AND VARIFOLDS FOR REPRESENTING THE RELAXATION OF A SECOND ORDER FUNCTIONAL

SIMON MASNOU

INSTITUT CAMILLE JORDAN, UNIVERSITÉ LYON 1
43, BOULEVARD DU 11 NOVEMBRE 1918 69622 VILLEURBANNE CEDEX FRANCE
MASNOU@MATH.UNIV-LYON1.FR

ABSTRACT. Young measures are fundamental tools for capturing phenomena of concentration and oscillation in the limit of certain functionals, in particular those whose integrand involve sequences of weakly converging gradients. Is is possible to use such tools for second order functionals ? In a joint work with Giacomo Nardi (Paris 6), we investigate more particularly a functional that penalizes the curvature of the level lines of a function and we address the problem of representing its relaxation in the space BV. We propose a notion of varifolds associated with Young measures and we prove that, at least in dimension 2, this notion correctly captures second-order concentration effects. The talk will be illustrated with explicit examples of such effects.