

Non linear function spaces associated to singular perturbations

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We describe some two-dimensional models arising in non-linear elasticity (compressed thin films) and in micromagnetics, obtained by suitable singular perturbations.

In this connection we discuss the problems of compactness and Gamma-convergence and the description of the limit function spaces, defined by suitable classes of entropies.

Finally, we describe a recent joint work with M.Lecumberry, B. Kirchheim and T. Riviere (and an independent work by Otto and De Lellis) on the rectifiability and the fine properties of functions in this class.