

Nonlocal character of the reduced theory of thin films with higher order perturbations

In this talk it is shown that, when there is lack of coercivity with respect to some partial derivatives on the underlying field u , then the relaxation of the functional

$$u \mapsto \int_{\Omega} f(u, Du) dx$$

may fail to be local. This result is applied to a singular perturbation model for a membrane energy depending on deformations and out-of-plane bending.

This is joint work with Gianni dal Maso and Giovanni Leoni.