Two results concerning G-convergence

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Abstract

In the theory of PDEs it is well-known that, assuming suitable ellipticity conditions, the equation

$$-\sum_i \partial_i(\sum_j a_{ij}\partial_j u) = g$$

admits a unique weak solution $u(g) \in H_0^1(\Omega)$ for every $g \in H^{-1}(\Omega)$.
After recalling the basic notions and prerequisites, we will mainly focus on two problems. The first concerns the so called "G-convergence", which arises when dealing with the weak solutions for a sequence of operators as above satisfying the same ellipticity conditions. In particular, it is of interest to establish whether such solutions converge (at least weakly) to the solution of a problem of the same kind, for each $g \in H^{-1}(\Omega)$. The second problem concerns the link between G-convergence and the Γ-convergence of the related quadratic forms.

References

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