

H-Convergence and Multilayering in Piezocomposites

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The development of homogenization as well as their applications to micromechanics, mechanics of composites and porous media, and to optimal design provides new possibilities of micro-macro modeling. The extension of results to piezoelectricity is important due to the straightforward applications in high technology (smart materials). The main aim of the present contribution is to present the following new results: extension of the notion of H-convergence to piezocomposites and derivation of the formula for the effective moduli of p-times laminated piezoelectric composite. The second aim is to formulate the optimization problem for minimum compliance in the case of composites made of two piezoelectric materials. In such a case the compliance functional involves also electric field.

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