Mathematics > Analysis of PDEs

Two-scale convergence of elliptic spectral problems with indefinite density function in perforated domains

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Spectral asymptotics of linear periodic elliptic operators with indefinite (sign-changing) density function is investigated in perforated domains with the two-scale convergence method. The limiting behavior of positive and negative eigencouples depends crucially on whether the average of the weight over the solid part is positive, negative or equal to zero. We prove concise homogenization results in all three cases.

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