

Stochastic homogenization of high-contrast medium

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We study the homogenisation problem for elliptic high-contrast operators A_ε whose coefficients degenerate as $\varepsilon \rightarrow 0$ on a set of randomly distributed inclusions. We discuss the limit operator (in the sense of the resolvent convergence) and the convergence of spectrum. On the bounded domain the limiting spectrum is equal to the spectrum of the limit operator, while in the whole space setting the spectrum of the limit operator is the subset of the limiting spectrum. Additionally we characterize the limiting spectrum in the case of finite correlation. This is a joint work with Matteo Capoferri (University of Cardiff), Mikhail Cherdantsev (University of Cardiff) and Kirill Cherednichenko (University of Bath).

References

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