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Homogenization of the diffusion equation in domains with the fine-grained boundary with the nonlinear boundary Robin condition. (Russian. English summary) [Zbl 1374.35175](#)

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Summary: In this paper we consider the boundary-value problem for the stationary diffusion equation in perforated domains with a large number of non-overlapping small balls on the surface of which the nonlinear Robin condition is given. We study the asymptotic behaviour of solution of the problem. We derive homogenization equations describing the principal term of the asymptotic of the solutions.

MSC:

[35J65](#) Nonlinear boundary value problems for linear elliptic equations

[35B27](#) Homogenization in context of PDEs; PDEs in media with periodic structure

Keywords:

[diffusion](#); [Robin condition](#); [quasi-solution](#)

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