On the Homogenization of a Diffusion Problem with Flux Jump

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Using the periodic unfolding method introduced in [1], the homogenization of a diffusion problem in a highly heterogeneous medium formed by two constituents separated by an imperfect interface is studied. The main feature of our setting is represented by the discontinuity of the solution and of the flux. Depending on the magnitude and the form of these jumps, various models arise at the limit. Such models can be used for describing the calcium dynamics in biological cells and represent a generalization of some existing results in the literature (see [2]-[4]).

References

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