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*Operator error estimates for homogenization of elliptic and parabolic systems*

We consider a matrix strongly elliptic second order differential operator acting in a bounded domain with the Dirichlet boundary condition. The operator is self-adjoint. Coefficients are periodic and oscillate rapidly. We study the behavior of solutions of the corresponding elliptic and parabolic systems in the small period limit. The results can be written as approximations of the resolvent and the semigroup in  $L_2 \rightarrow L_2$  and  $L_2 \rightarrow H^1$  operator norms. So, the estimates of this type are called operator error estimates in homogenization theory. The talk is based on a joint work with T. A. Suslina.