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Homogenization of Changing-Type Evolution Equations

We study the homogenization of the linear equation

$$R(\varepsilon^{-1}x)\frac{\partial u_\varepsilon}{\partial t} - \operatorname{div}(a(\varepsilon^{-1}x)\cdot\nabla u_\varepsilon) = f \ ,$$

with appropriate initial/final conditions, where R is a measurable bounded periodic function and a is a bounded uniformly elliptic matrix, whose coefficients a_{ij} are measurable periodic functions.
Since we admit that R may vanish and change sign, the usual compactness of the solutions in L^2 may not hold if the mean value of R is zero.