

# Homogenization of linear Evolution Equations with generalised broad-sense stationary random Initial Conditions

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## Abstract

We study the homogenization problem for the following evolution equation

$$\begin{cases} \partial_t u^\varepsilon = \mathcal{L}u^\varepsilon & \text{on } [0, \infty) \times \mathbb{R}^d \\ u^\varepsilon(0) = \eta_0^\varepsilon & \text{on } \mathbb{R}^d, \end{cases}$$

where  $\eta_0^\varepsilon$  is a broad-sense stationary generalised random field and  $\mathcal{L}$  is a linear operator generating a  $C_0$ -semigroup of linear operators on a certain Hilbert space corresponding to  $\eta_0^\varepsilon$ .