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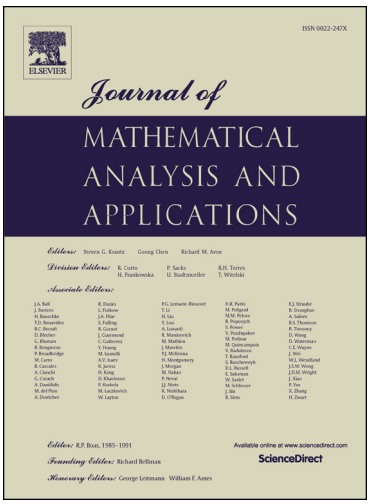

Stochastic homogenization of the bending plate model

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Stochastic homogenization of the bending plate model

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Abstract

We use the notion of stochastic two-scale convergence introduced in [ZP06] to solve the problem of stochastic homogenization of the elastic plate in the bending regime.

Keywords: elasticity, dimension reduction, stochastic homogenization, stochastic two-scale convergence.

1 Introduction

The problem of rigorously deriving a two-dimensional model approximating a three-dimensional (nonlinear) elastic plate with very small thickness was long outstanding. It was finally solved in [FJM02] in terms of Γ-convergence after establishing the geometric rigidity estimate. With this estimate they further managed in [FJM06] to derive a multitude of related models. Their results

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