Homogenized equations of the linear elasticity in two-dimensional domains with very rough interfaces

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Abstract: The main purpose of the present paper is to find homogenized equations in explicit form of the linear elasticity theory in a two-dimensional domain with a very rough interface. In order to do that, equations of motion and continuity conditions on the interface are first written in matrix form. Then, by an appropriate asymptotic expansion of the solution and using standard techniques of the homogenization method, we have derived explicit homogenized equations and associate continuity conditions. Since these equations are in explicit form, they are significant in practical applications. ?? 2010 Elsevier Ltd. All rights reserved.

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