



Stochastic homogenization of subdifferential inclusions via scale integration

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(Submitted on 12 Jul 2011)

We study the stochastic homogenization of the system $-\operatorname{div} \sigma^\epsilon = f^\epsilon$ $\sigma^\epsilon \in \partial \phi^\epsilon$ (∇u^ϵ), where (ϕ^ϵ) is a sequence of convex stationary random fields, with p -growth. We prove that sequences of solutions $(\sigma^\epsilon, u^\epsilon)$ converge to the solutions of a deterministic system having the same subdifferential structure. The proof relies on Birkhoff's ergodic theorem, on the maximal monotonicity of the subdifferential of a convex function, and on a new idea of scale integration, recently introduced by A. Visintin.

Comments: 23 pages

Subjects: **Analysis of PDEs (math.AP)**

MSC classes: 35B27, 35R60 (35J60, 39B62)

Journal reference: Intl. J. of Struct. Changes in Solids 3 (2011), no. 1, 83-98

Cite as: **arXiv:1107.2374 [math.AP]**

(or **arXiv:1107.2374v1 [math.AP]** for this version)

Submission history

From: Marco Veneroni [[view email](#)]

[v1] Tue, 12 Jul 2011 19:10:54 GMT (18kb,D)

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