

Milton, G. W.

Modelling the properties of composites by laminates. (English) Zbl 0631.73011

Homogenization and effective moduli of materials and media, Proc. Workshop, Minneapolis/Minn. 1984/85, IMA Vol. Math. Appl. 1, 150-174 (1986).

[For the entire collection see [Zbl 0622.00024](#).]

This paper deals mainly with a modelling of the functional dependence of the effective conductivity by laminates. The author discusses the existing results and proposes many open problems. Analogies with electrical network problems are also examined, and approaches using G- closures and variational methods are briefly reviewed.

To an exhaustive list of references I would like to add an excellent review paper by *K. A. Lur'e* and *A. V. Cherkaev*: Effective characteristics of composites and optimum structural design, *Uspechi Mehaniki* 9, 3-81 (Russian) (1986).

In an appendix the author discusses the connection between transformations used by other writers to derive bounds on the effective dielectric constant (or conductivity) and the work by *G. A. Baker* [*J. Math. Phys.* 10, 814-820 (1969; [Zbl 0175.361](#))].

The paper will surely be of interest to physically oriented researchers in the field of composite materials.

Reviewer: [J.J.Telega](#)

MSC:

- [74E05](#) Inhomogeneity in solid mechanics
- [74E30](#) Composite and mixture properties
- [74F15](#) Electromagnetic effects in solid mechanics
- [74S30](#) Other numerical methods in solid mechanics (MSC2010)

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Keywords:

[Hashin-Shtrikman bounds](#); [Stieltjes functions](#); [functional dependence](#); [effective conductivity](#); [laminates](#); [electrical network problems](#); [G- closures](#); [transformations](#); [bounds on the effective dielectric constant](#)