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DEL SANNIO Benevento

DST

DIPARTIMENTO DI SCIENZE E TECNOLOGIE

GIORNATE SCIENTIFICHE DEL DST

Prof. Paolo Musolino

Ca' Foscari University of Venice

Effective conductivity of a periodic dilute composite with thermal resistance at the two-phase interface

MERCOLEDÌ 17 GIUGNO 2020 ORE 11:00

SEMINARIO VIA WEB

Presentato e moderato dalla Prof.ssa Carmen Perugia

Per partecipare all'evento:

Inviare una richiesta al Dott. Bruno Massa massa@unisannio.it, si riceverà un invito con un link che consentirà l'accesso alla piattaforma.

ABSTRACT

In this talk we discuss the asymptotic behavior of the effective thermal conductivity of a periodic two-phase dilute composite obtained by introducing into an infinite homogeneous matrix a periodic set of inclusions of a different material, each of them of size proportional to a positive parameter ε . We assume that the normal component of the heat flux is continuous at the two-phase interface, while we impose that the temperature field displays a jump proportional to the normal heat flux. For ε small, we show that the effective conductivity can be represented as a convergent power series in ε and we determine the coefficients in terms of the solutions of explicit systems of integral equations.

Based on joint work with M. Dalla Riva and R. Pukhtaievych.