

Monday October 28, 2019 at 14:30 Politecnico di Torino, DISMA, Aula Buzano (third floor)



INSA Rennes & IRMAR

Loss of ellipticity by homogenization in 2D elasticity and application to elastodynamics

Prof. Valeria Chiadò-Piat introduces the seminar.

Abstract

In this work in collaboration with G. Francfort (University Paris 13) we obtain a homogenization result in 2D linear elasticity for the L^2 -weak convergence of the displacements, for a two-phase material a phase of which is not very strongly elliptic. In the particular case of the two-phase laminate studied by Gutiérrez (1990), the homogenized tensor turns out to be not strongly elliptic in the direction perpendicular to the lamination. As a consequence the associated homogenized elastodynamics equation is showed to allow transverse wave planes while inhibiting longitudinal waves.

M. Briane & G. Francfort: "A two-dimensional labile aether through homogenization", Com. Math. Physics, 367 (2) (2019), 599-628.

Biography

Marc Briane is Professor at Institut National des Sciences Appliquées de Rennes (INSA) and member of the IRMAR. His research concerns, among the other, homogenization of elliptic equations with non-uniformly bounded coefficients and the study of the properties of composite materials in Electrophysics.