

Programa de doctorado del departamento de matemáticas de la Universidad Autónoma de Madrid \*

Calculus of Variations, Compensated Compactness and Young measures

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**Fechas**: 7,8,14,15,21,22,28,29  de Marzo de 11.30 a 13.00 (Miercoles y Jueves)

**Lugar:** Aula 520 Departamento de Matemáticas Universidad Autónoma de Madrid

**Summary:**

The course starts with a brief review of weak and weak star

convergence of sequences of functions and measures. Next, classes

of Young measures are introduced and shown to describe the one--point

statistics of such sequences. The focus then shifts to the case where

the converging sequences consist of distributional derivatives of

vector--valued Sobolev functions, and more generally, functions of

bounded variation. In this scenario we aim to discuss aspects of

Compensated Compactness, and in particular the duality between gradient Young measures and Morrey's notion of quasiconvexity. Along the way we encounter problems concerning semicontinuity of integral functionals, and the notions of laminates and rank--one convex functions.

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