ÉCOLE POLYTECHNIQUE
FÉDÉRALE DE LAUSANNE

B. Buffoni – B. Dacorogna – J. Krieger - H.M Nguyên - Section Mathématiques

SEMINAIRE D'ANALYSE

➢ ***VENDREDI 08 MAI 2015 à 15h15 - salle MA A331***

Professeur ***HARTMUT SCHWETLICK*** *(*University of Bath, UK) donnera une conférence sur le thème:

« On phase-transition waves in FPU-type chains»

We consider travelling wave solutions for the Fermi-Pasta-Ulam lattice, the elasticity model of a 1-dimensional atomic chain.

As they play the role of phase-transition in the case of a non-convex, multi-well interaction potential such structures play an important role in material science to provide suitable kinetic relations for more complex elastic models. The non-convex case is little studied and most results are confined to piecewise quadratic potentials.

In the talk I will provide a brief introduction in these results and extend the study to a genuine nonlinear perturbation of the bi-quadratic double well potential.

We show that the full family of waves for the unperturbed problem persists under a sufficiently small pertutbation and discuss their implications to find the kinetic relation for the perturbed case.

This is joint work with M Herrmann, K Matthies and J Zimmer.

Lausanne, le 29 avril 2015
BD/BB/vl

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Les séminaires qui ont lieu à la Section de Mathématiques sont annoncés sur Internet
http://memento.epfl.ch/maths/