ÉCOLE POLYTECHNIQUE
FÉDÉRALE DE LAUSANNE

Institut d'Analyse et Calcul Scientifique (IACS)
Section Mathématiques

SEMINAIRE D'ANALYSE

- ***VENDREDI 9 mai 2008 à 16h.15 à la salle MA 30***

Monsieur ***Robert MAGNUS*** *(University of Iceland, Islande)* donnera une conférence sur le thème:

"CONCENTRATION OF SOLUTIONS OF A SEMILINEAR PDE WITH SLOW SPATIAL DEPENDENCE"

The non-linear Schrödinger equation in $\mathbb{R}^n$

$$-\epsilon^2 \Delta u + V(x)u - u^p = 0$$

has been the subject of much research during the last two decades. The problem is to find non-trivial solutions for small ϵ (Planck's constant). It is now well understood that these solutions concentrate at critical points of the scalar potential function $V(x)$. Solutions are known that concentrate at a single critical point (single bump solutions) and others that concentrate at more than one (multibump solutions). In this talk we shall look at general problems of the form

$$-\epsilon^2 \nabla \cdot (P(x)\nabla u) + F(V(x), u) = 0,$$

where $V(x)$ is a vector function and $P(x)$ a matrix function, and consider how solutions concentrate in the limit $\epsilon \to 0$.

Lausanne, le 22 avril 2008
CS/mg

Les séminaires qui ont lieu à la Section de Mathématiques sont annoncés sur Internet à l'adresse WWW (http:// www.epfl.ch/cgi-bin/memento/memento)