Second meeting of the ANR RAGE
Nantes : November 21& 22
2019

PROGRAMME

	Thursday 21	Friday 22
9h30-10h15		E.M. Ouhabaz
10h15-11h00		*Coffee break*
11h-12h		Y. Meng
14h15-15h00	S. Monniaux	
15h30-16h15	M. Bonnefont	
16h15-17h00	*Coffee break*	
17h00-18h00	C. Benea	

TITLES AND ABSTRACTS

Sylvie Monniaux :
Title : About traces of vector fields on non smooth domains
Abstract : It is well-known that the trace operator acting on H^1 functions on a Lipschitz domain with values in L^2 functions on the boundary is a compact operator. The question is a little more delicate for L^2 vector fields with L^2 *divergence*, L^2 *curl* and a partial boundary condition. I will present an elementary proof of the boundedness and compactness of the trace operator on spaces of this type, proof due to Clément Denis.

Michel Bonnefont :
Title : Diffusions sous elliptiques et critères de courbure-dimension généralisé
Abstract : TBA

C. Benea :
Title : On bilinear orthogonality
Abstract : Mainly, we are interested in understanding bilinear operators describing highly singular interactions between two functions : for example, $\int f(x-t)g(x+t)dt/t$. These operators are also modulation invariant, a feature that differentiates them even more from classical operators. We present a few questions (versions of Littlewood-Paley and Rubio de Francia square functions, a Bourgain maximal lemma) intended to shed some light on orthogonality phenomena, i.e. interactions of objects having disjoint Fourier supports. Joint work with M. Vitturi.

El Maati Ouhabaz :
Title : The Dirichlet-to-Neumann semigroup on continuous functions.
Abstract : We consider the Dirichlet-to-Neumann operator N on the boundary Γ of a bounded domain of class $C^{1+\epsilon}$. The operator N is defined as the conormal derivative of solutions of $div(A(x)\nabla u) = 0$. We assume that the matrix A is elliptic and has Hölder continuous coefficients. We prove that N generates a holomorphic semigroup on $C(\Gamma)$. The approach is based on Poisson bounds of the corresponding heat kernel of N.

Yang Meng :
Title : Local and Non-Local Dirichlet Forms on the Sierpinski Gasket and the Sierpinski Carpet
Abstract : We give a unified purely analytic construction of a self-similar local regular Dirichlet form on the Sierpinski gasket and the Sierpinski carpet using approximation of stable-like non-local closed forms which gives an answer to an open problem in analysis on fractals.