

**”Théorie spectrale des nouveaux matériaux” du 18/04/2016 au  
22/04/2016**

**PROGRAMME**

**Monday 18 April 2016**

09h30 Opening

10h00-10h50

B.Nachtergaele: Stability of Frustration-Free Ground States of Quantum Spin Systems

11h00-11h50

S.Shipman: Spectrally embedded bound states for quantum graphs

12h30-13h30 LUNCH

14h00-14h50

J.-B. Bru: From the 2nd Law of Thermodynamics to  $AC$ -Conductivity Measures of Interacting Fermions in Disordered Media

15h00-15h30 CAFÉ

15h30-16h20

S.Enoch: Metamaterials, transformation optics for waves engineering

16h30-17h20

M.Kadic: Mechanical Metamaterials

17h30-18h00 CAFÉ

18h00-18h50

O.Miller: Material-dictated upper bounds for scattering response in linear systems

**Tuesday 19 April 2016**

10h00-10h50

T.Martin: Electronic quantum optics with quantum Hall edge channels and topological insulators

11h00-11h50

N.Rougerie: Emergent anyons in quantum Hall physics

12h30-13h30 LUNCH

14h00-14h50

Y.Kubota: Twisted equivariant  $K$ -theory and topological phases

15h00-15h30 CAFÉ

15h30-16h20

N.Bonod: Effective medium theory to mimic the fields scattered by metallic particles with insulators

16h30-17h20

H.-M. Nguyen: Applications and stabilities of negative index materials

17h30-18h00 CAFÉ

18h00-18h50

G.De Nittis: Topological nature of the Fu-Kane-Mele invariants

**Wednesday 20 April 2016**

10h00-10h50

H.Neidhardt: Scattering matrix and Dirichlet-to-Neumann maps

11h00-11h50

A.Welters: Analyticity of the Dirichlet-to-Neumann Map for Maxwells Equations in Passive Composite Media

12h30-13h30 LUNCH

**Thursday 21 April 2016**

10h00-10h50

T.Omori: A discrete surface theory on 3-valent graphs embedded in 3-dimensional Euclidean space

11h00-11h50

S.Matsuo: Gysin maps and bulk-edge correspondence

12h30-13h30 LUNCH

14h00-14h50

A.Figotin: Overdamping in gyroscopic systems composed of high-loss and lossless components

15h00-15h30 CAFÉ

15h30-16h20

K.Cherednichenko: Asymptotic behaviour of the spectra of systems of Maxwell equations in periodic composite media with high contrast

16h30-17h20

M.Lein: Rigorous analogies between quantum systems and certain wave equations

17h30-18h00 CAFÉ

18h00-18h50

D.Hundertmark: Discrete diffraction managed solitons: threshold phenomena and rapid decay for general nonlinearities

**Friday 22 April 2016**

10h00-10h50

M.Lim: Spectrum of the Neumann-Poincaré operator and plasmon resonance

11h00-11h50 J.Brüning: Heat kernel estimates on arbitrary Riemannian manifolds

12h30-13h30 LUNCH

14h00-14h50

B.M.Brown: Uniqueness for an inverse problem in electromagnetism with partial data

15h00-15h30 CAFÉ

15h30-16h20

L.Lu: Topological and invisible photonic crystals

16h30-17h20

C.Amra et M.Bellieud: Heat flow with thermal metamaterials

17h30-17h35 Closure

17h35-18h00 CAFÉ