

## Chiral modes in optics and electronics of 2D systems (Nov 26-28 2018)

The conference will be held in the Centre Paul Langevin (CAES du CNRS), 24 rue du Coin, 73500 Aussois, France.

The conference room is La Parrachée in the Centre Paul Langevin. Coffee breaks will be in front of the conference room.

Lodging and meals (breakfast, lunch and dinner) will be in the Chalet de l'Oérine, just across the street, 50 meters from the Centre Paul Langevin.

### **Monday Nov 26**

11h: Bus shuttle (TRANSDEV) from Modane train station to Centre Paul Langevin and Chalet de l'Oérine (Aussois)

11h30: Arrival in Chalet de l'Oérine (Aussois)

12h15-13h30 : Lunch (Restaurant in Chalet de l'Oérine)

#### Optics session (La Parrachée, Centre Paul Langevin):

13h45: Opening by the organizers

14h-15h30 : Kostya Bliokh (Riken, Japan/Canberra, Australia): Angular momenta and spin-orbit interactions of light

15h30-16h : Coffee break (just in front of the conference room)

16h-16h30 : Yuri Gorodetski (Ariel, Israel): Spin-locking in chiral plasmonic modes

16h30-17h : Kobus Kuipers (Delft, Netherlands): Nanoscale light twists -surprises, tragedy and applications-

17h-17h20 : Daniel Bloch (Villetaneuse, France): Nearly-forbidden optical Transitions, Nanooptics, opals, ...

17h20-17h40 : Nicolas Cherroret (Paris, France): Multiple scattering of light in dimension (2+1): spin-Hall effect and non-paraxial diffusion

17h40-18h : Thierry Grosjean (Besançon, France): Magnetic spin-orbit interaction of light

18h-18h20 : Bart Van Tiggelen (Grenoble, France): Momentum of the electromagnetic quantum vacuum in magneto-chiral and magneto-electric media

18h20-18h40 : Farhad Khosravi (Edmonton, Canada): Unified spin electrodynamics of Maxwell bosons and Dirac fermions

19h15-20h30 : Dinner (Restaurant, Chalet de l'Oérine)

20h30-22h30 : Poster Session (Bar, Chalet de l'Oérine)

Pacôme Armagnat (Grenoble, France): How fast does a voltage pulse travel through a quantum conductor?

Stefano Azzini (Strasbourg, France): Chiral coupling of valley excitons in a transition metal dichalcogenide monolayer with plasmonic resonators

Olivier Bleu (Clermont-Ferrand, France): Non-adiabatic anomalous Hall effect for exciton-polaritons

Pascal Degiovanni (Lyon, France): Signal processing for electron quantum optics

Denis Garoli (Genova, Italy): New methods for controlled deposition of 2D material flakes on plasmonic nanostructures for hybrid system preparation

Thierry Grosjean (Besançon, France): Steering nanoscale optical flows by coupling photon spin to plasmon extrinsic angular momentum

Maëlle Kapfer (Saclay, France): A Josephson relation for fractionally charged anyons

Sergei Koniakhin (Clermont-Ferrand, France): Analog Kerr Black hole and Penrose effect in a Bose-Einstein Condensate

Laurence Pruvost (Orsay, France): Interplay between atoms and optical vortices through a Raman transition

Philippe St-Jean (Palaiseau, France): Orbital angular momentum lasing with optically-controlled chirality

Matteo Secli' (Trieste, Italy): Numerical characterization of a Harper-Hofstadter topological laser

René-Jean Tarento (Orsay, France): Magnetoplasmon of 2D Dirac fermion on a sphere

Shaojun Wang (Eindhoven, Netherlands): Screened strong coupling of excitons in multilayer WS<sub>2</sub> with collective plasmonic resonances

## **Tuesday Nov 27**

7h30-8h30: Breakfast (Restaurant, Chalet de l'Oérine)

### Electronics session (La Parrachée, Centre Paul Langevin)

8h30-10h : Pascal Simon (Orsay, France): Chiral edge states in topological insulators and superconductors

10h-10h30 : Coffee break (just in front of the conference room)

10h30-11h : Stéphane Berciaud (Strasbourg, France): Exciton dynamics and valley-contrasting properties in heterostructures based on atomically-thin semiconductors

11h-11h30 : Gwendal Fève (Paris, France): Spin-charge separation in chiral edge channels

11h30-11h50 : Tobias Stauber (Madrid, Spain): On chiral plasmonics in 2D

11h50-12h10 : Everton Arrighi (Grenoble, France): Unveiling the bosonic nature in an ultrashort single-electron pulse

12h10-12h30: Luiz Tizei (Orsay, France): Phase shaped electron beams to probe excitations with specific symmetries at the nanoscale: symmetry dependent electron energy loss spectroscopy

12h30-14h: Lunch (Restaurant, Chalet de l'Oérine)

### Artificial crystals session (La Parrachée, Centre Paul Langevin)

14h-15h30 : Alberto Amo (Lille, France): Chiral modes in artificial crystals

15h30-16h : Coffee break (just in front of the conference room)

16h-16h30 : Fabrice Mortessagne (Nice, France): Topological photonics with microwaves

16h30-17h : Nathan Goldman (Bruxelles, Belgium): The quantized Hall conductance of a single atomic wire

17h-17h20 : Guillaume Malpuech (Clermont-Ferrand, France): Exciton-Polariton based topological photonics and topological lasers

17h20-17h40 : Luis Martin-Moreno (Zaragoza, Spain): Polariton anomalous Hall effect in transition-metal dichalcogenides

17h40-18h : Gilles Montambaux (Orsay, France): Orbital edge states in a photonic honeycomb lattice

18h-18h20 : Guy Le Lay (Marseille, France): Exotic forms of low-dimensional epitaxial silicon and Xenos

19h30-22h : Conference dinner (Raclette, Restaurant, Chalet de l'Oérine)

## **Wednesday Nov 28**

7h30-8h30: Breakfast (Restaurant, Chalet de l'Oérine)

Concluding session on quantum Hall effect and superconductors (La Parrachée, CPLangevin)

8h30-8h50: Anu Jagannathan (Orsay, France): Proximity induced superconductivity in a 1D quasicrystal

8h50-9h10: Tristan Cren (Paris, France): Two-dimensional superconductivity in Pb/Co/Si(111)

9h10-9h30: Benjamin Roussel (Lyon, France): Taming electronic decoherence in quantum Hall edge channels

9h30: Closing by the organizers

10h-11h: Lunch bag pick-up (Restaurant, Chalet de l'Oérine)

11h: Bus shuttle (TRANSDEV) from Chalet de l'Oérine to Modane train station