



UNIVERSITÀ
DEGLI STUDI
DI PALERMO

DIPARTIMENTO DI FISICA e CHIMICA
Via Archirafi 36

AVVISO DI SEMINARIO

La **Dr.ssa Eleonora Vella**, Université de Montréal, Laboratoire pour l'Étude de Matériaux de Pointe par Spectroscopie Ultrarapide, terrà un seminario dal titolo:

2D Electronic coherence spectroscopy as a tool to unravel cavity polaritons coherences

il giorno **23 gennaio p.v. alle ore 15** in Aula B.

Exciton-polaritons are half-light, half-matter quasi-particles formed by excitons strongly coupled to the confined electromagnetic field of a microcavity. Their very low effective mass ($<10^{-4}$ the electron mass) and their bosonic character allows a phase transition to a Bose-Einstein Condensate (BEC) at relatively high temperature.

In this presentation, I will describe our recent experimental efforts to reveal the dynamics of polariton-polariton coupling in organic-semiconductor microcavities. We employ two-dimensional electronic coherence spectroscopy (2D-ECS), an ultrashort technique belonging to the family of 2D Fourier spectroscopy. This technique uses a sequence of four ultrafast pulses with controlled spectral phase and delay to excite coherently a material system. Each pulse modifies the quantum states of the system in a known way. The signal emitted after the pulse sequence permit to build a correlation map revealing the nature of the coupling between different energy levels. In our microcavities, it allows to probe polariton-polariton interactions along the dispersion curve.

Il seminario è rivolto a ricercatori, dottorandi e studenti.

Roberto Boscaino