



## Lectures on Quantum Optics

### Two Platforms: Cavity and Waveguide QED

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**Date:** May 22<sup>th</sup> and 28<sup>th</sup> 2018 – 14h00-17h15 (with a break)

**Location:** Laboratoire Kastler-Brossel, Campus Pierre et Marie Curie, Paris  
Tour 23-13, 2<sup>ème</sup> étage, Salle 210

This series of four lectures in two days will be devoted to two platforms for quantum optics: Cavity QED and what is beginning to be known as waveguide QED using optical nanofibers:

**1<sup>st</sup> lecture:** Introduction to the interaction of laser light with atoms in its simplest form. We will develop tools to quantify the strength of the interaction and how it is important for quantum optics experiments and their implementation in cavity and waveguide QED.

**2<sup>nd</sup> lecture:** From a perturbative approach to the strong coupling regime. Different frequency implementations (from the microwave to the optical). Some experiments in cavity QED in the optical regime.

**3<sup>rd</sup> lecture:** Some recent experiments in waveguide QED implemented in optical nanofibers.

**4<sup>th</sup> lecture:** A view to the future of cavity and waveguide QED experiments and how they can enlighten both quantum optics and other areas of physics.

*Note: These lectures can be credited for the doctoral training of the EDOM and EDPIF.*