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ICFO
The Institute
of Photonic
Sciences



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Aix-Marseille



Master in Photonics – “PHOTONICS BCN” ERASMUS+ “EUROPHOTONICS”

MASTER THESIS PROPOSAL

Dates: April - September 2020

Laboratory : Atomic Quantum Optics

Institution: ICFO – The Institute of Photonic Sciences

City, Country : Barcelona, SPAIN

Title of the master thesis: Experiments in atom/photon interactions

Name of the master thesis supervisor: Morgan Mitchell

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Keywords : quantum optics, atomic physics, quantum technology, light-matter interactions

Summary of the subject (maximum 1 page) :

The Atomic Quantum Optics group studies quantum effects at the interface between light and atomic matter. We have three distinct research laboratories: Single-atom/single-photon interactions, extreme sensing with atomic vapors, and Bose-Einstein condensates. A Master project would be possible in any of these areas. Current topics include: trapping and cooling of single atoms, sensing magnetic fields beyond the shot noise limit, and quantum control of superfluid ferromagnets. If interested please contact the supervisor to discuss specific projects.

Additional information :

* Required skills : Good background in physics or related subject.

* Miscellaneous : Experience with experimental research is desirable.