ICFO



# INSIGHT SEMINAR | Experimental tests of Bell?s inequalities at Institut d?Optique (1980-82): past achievements and future directions.

PHILIPPE GRANGIER

March 27, 2025
16:00 to 17:00
Elements Room

**ABSTRACT**

We will review the motivations and history of the experiments that lead to the Nobel Prize in Physics 2022, attributed to Alain Aspect, John Clauser and Anton Zeilinger. We will the discuss some future perpectives, both on the side of quantum technologies, and on the sid of the more philosophical issues that motivated initially these experiments.?

**BIO:**

Philippe Grangier is Director of Research at CNRS, working at the Laboratoire Charles Fabry at the Institut d'Optique in Palaiseau, France. In the early 1980's he worked on Bell's

inequality tests and single-photon interference experiments, under the direction of Alain Aspect. Then he set up the Quantum Optics group at the Institut d'Optique, and he carried out a wide range of experiments, including quantum non-demolition (QND) measurements, quantum cryptography, the production of single photons and optical Schrodinger cats, and the manipulation of single trapped atoms. The methods he developed in these experiment now have numerous applications for quantum technologies. He has coordinated ma y national and European projects, and he leads currently the QUCATS support a d coordination action (CSA), assisting the European Commission in many scientific a d logistical aspects of quantum technologies.

**Hosted by:** Prof. Dr. Maciej Lewenstein