

UNIVERSITÉ
CÔTE D'AZUR



INSTITUT FÉDÉRATIF DE RECHERCHE
QUANTAZUR



Quantum at University Côte d'Azur

Presented by Virginia D'Auria
MdC à l'Institut de Physique de Nice

UNIVERSITY CÔTE D'AZUR



A research-intensive,
multidisciplinary university

*Awarded the prestigious 'Initiatives of
Excellence' certification label
(IDEX)*



Research strategy: explore new interdisciplinary areas, promote excellence

Ex. Interdisciplinary Institute for Artificial Intelligence (3IA), Deep Law 4 Tech
NeuroMod Institute for Modeling in Neuroscience and Cognition...

A Quantum multidisciplinary effort



Quantum at Univ. Côte d'Azur

Quantum: a strategic axes at University Côte d'Azur



Institut Fédératif QuantAzur

Created in March 2022



**GATHERING DIFFERENT KNOW-HOWS AROUND QUANTUM to
FOSTER RESEARCH and EDUCATION**

Practical Organisation



8 Founding Laboratories:



- Around 50 researchers from fundamental sciences, technologies, computer science...
- Collaborations ongoing or already identified
- Interdisciplinary skills covering different Q. topics

+ skills of



Research axes



- 8 Founding laboratories: 4 main research axes



Quantum
Metrology



Ex. Entanglement-based white-light quantum interferometry
Quantum for gravitational wave detection

Talk Margherita
Turconi

Research axes



- 8 Founding laboratories: 4 main research axes



Quantum Computing/
Simulation



Ex. Quantum computing for quantum chemistry, for AI and robotics...

Quantum simulation with hot atomic vapor , with semiconductor two-dimensional platforms, ultracold atomic gases confined in 1-d (theory)

Research axes



- 8 Founding laboratories: 4 main research axes



Quantum Communication



Quantum@UCA:
talk **Olivier Alibert**

Ex. Real-field and operational quantum communication links
Single-photon emitters in a semiconducting platform
Quantum integrated photonics
Quantum memories based on rare-earth doped crystal ...

Research axes



- 8 Founding laboratories: 4 main research axes



Fundamental Quantum Science



Ex. Quantum fluids of light, Quantum probabilities, Quantum control, Stellar quantum light...

Talk William Guerin



QuantAzur : General Objectives



Organizing and strengthening UCA Quantum expertise and excellence
(consolidate existing collaborations, create new synergies)

Bring researchers together

06/2022 : journées QuantAzur

06/2023 : Workshop with Majulab-Singapore
(*Inphyni-Crhea*)

Thematic workshops

2022 and 2023: Maths for Q. Technologies (*LJAD*)

11/2023: Quantum Technos Régulations (*Gredeg*)

11/2023 : Quantum and Time-Frequency (*GéoAzur. Inphyni*)

Seminars at univ. Côte d'Azur laboratories, supports to local events...

QuantAzur : General Objectives



Organizing and strengthening UCA Quantum expertise and excellence



Highlight UCA Quantum activities

(with regard to academic actors, industry, students)

IRN Canada-France Quantum Alliance

(1^{er} workshop, mai 2023)

11/22 : QuanticDay@Bruxelles

(at the European Union)

QuantAzur : General Objectives



Organizing and strengthening UCA Quantum expertise and excellence



Highlight UCA Quantum activities



Promoting strategic projects able to reply to calls on Q. Techno

(in France and in Europe, including on training aspects)

07/2023 : a summer school on
Quantum Computing and Information



QuantEdu-France

QuantAzur : General Objectives



Organizing and strengthening UCA Quantum expertise and excellence



Highlight UCA Quantum activities



Promoting strategic projects able to reply to calls on Q. Techno

(in France and in Europe, including on training aspects)

**IF: identifying further possible industrial partners
and
relaying information on the calls-for-projets, international partnerships,
conferences on Quantum**

Our website

- An unique and easily recognisable contact with UCA Quantum forces



<https://univ-cotedazur.fr/quantazur>



Email :

quantazur@univ-cotedazur.fr