Domaine : Mathématiques et applications - **Thématique(s) :** Ingénierie

STAGES COURTS

INTRODUCTION TO THE QUANTUM FUTURE: QUANTUM INFORMATION 1.0

Quantum information is a rapidly growing field which promises incredible advantages across computation, communication and sensing. In recent years there has been a surge in activities to make these ideas into technological realities, with applications in diverse areas from secure communication, to machine learning, material science, chemistry, medical imaging, gravitational accelerometers, clock synchronisation and more. The aim of this training is to give the students an oveview of this rapidly expanding field, what its contributions are likely to be for our information age, what are the challenges ahead, and make them capable of judging for themselves the interest of the field.

Durée de la formation : 21 hours
Dates : Voir le calendrier
Lieu : Campus Pierre et Marie Curie – Paris (Jussieu)
Tarif : 1850 €

Modalité : Présentiel

GOALS

The aim of this training is to give the students an oveview of this rapidly expanding field, what its contributions are likely to be for our information age, what are the challenges ahead, and make them capable of judging for themselves the interest of the field.

TARGETED SKILLS

Participants will learn the answers to these questions
- What is quantum information?
- How is it different from 'classical' / conventional information?
- How might it change the world?
- What is the state if the art and the main challenges?

TRAINING SUPPORT

The team has experience teaching the basics of quantum information to students of all backgrounds, from non-scientific public, to engineers, to expert level researchers.

PUBLIC AND PRE-REQUISITE

- Senior technicians, engineers and researchers
- Some linear algebra essential. Background in physics, information theory helpful, minimum bac +3

PROGRAM

- Introduction to quantum information
- Quantum computation basics
- Quantum communication basics
- Quantum sensing basics
- Practical challenges
- The quantum information landscape

INFORMATIONS

Competency Development Action Category:
(Article L6313-1 of the Labour Code) – Training action
Workforce: Min 5 pers. / Max 20 pers.
Document: PDF course materials
Validation: Statement of accomplishment
Tailored sessions upon request

CONTACT

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Informations non contractuelles
PDF généré le 11/11/2026

- Visit to quantum communications laboratory

METHODS

- Clear courses with prepared material
- Suggested reading material and online pedagogical resources

DÉBOUCHÉS

This training allows individuals to secure their professional career by giving them the skills necessary to support companies in issues related to their sector of activity and to adapt to associated technological developments.

HIGHLIGHTS

- Contemporary overview of the rapidly growing field of quantum information by cutting edge researchers
- Both physics and information theory aspects covered
- Chance to see real cutting edge quantum devices
- Possibilty to tailor an extended course, in particular on quantum networks

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