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Type: **Keynote**

2nd Quantum Revolution: New Gateway to Information Technologies

Wednesday 10 September 2025 14:50 (30 minutes)

Today, the second quantum revolution is unfolding across the globe, driving the development of disruptive quantum technologies with the potential to reshape science, industry, and society. These technologies promise to open new commercial frontiers, address pressing global challenges, enhance strategic security capabilities, and enable future applications that are currently beyond imagination.

In this presentation, I will offer a brief overview of the emerging field of quantum information technology (QIT). To highlight the transformative potential of quantum technologies, I will begin by explaining key principles of non-relativistic quantum physics, focusing in particular on two fundamental phenomena: quantum superposition and quantum entanglement. I will also discuss the role of quantum measurements in these systems.

Finally, I will explore how QIT can support the development of innovative methods for improving nuclear test-ban monitoring, illustrating a practical application with significant global implications.

E-mail

In-person or online preference

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Session Classification: Keynote on 2nd Quantum Revolution