

Introduction to the plenary talk by Francesca Ferlaino

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It is a great pleasure to introduce our next plenary speaker, Professor Francesca Ferlaino.

Francesca is Professor of Atomic Physics at the University of Innsbruck and Scientific Director at the Institute for Quantum Optics and Quantum Information of the Austrian Academy of Sciences.

Her scientific journey began here in Italy. She studied physics at the University of Naples Federico II and received her PhD in 2004 from the University of Florence and the European Laboratory for Non-Linear Spectroscopy, LENS, before moving to Innsbruck.

Over the years, she has become one of the leading figures in the field of ultracold quantum gases, and in particular in the exploration of strongly dipolar quantum systems. Her group pioneered the use of highly magnetic atoms, such as erbium and dysprosium, as a new platform for quantum many-body physics. Among several landmark achievements, her team realized the first Bose-Einstein condensate of erbium and has played a central role in the experimental exploration of supersolid quantum states.

Her scientific contributions have been recognized by many prestigious distinctions, including three ERC grants and the Erwin Schrödinger Prize. Most recently, she was named Austria's Scientist of the Year 2025.

Today she will take us into one of the most intriguing manifestations of quantum matter: a state that combines crystalline order with superfluid flow.

Her talk is entitled "When Crystals Flow: The Emergence of Supersolid Quantum States."

Francesca, the floor is yours.