Invited Speaker 8

Making and Using Ultracold Gases: Artificial Non-Abelian Gauge Field

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Short Abstract:

Since their first achievement 25 years ago, ultracold gases becomes a major player in many aspects of quantum technologies such as sensing, quantum simulation and quantum information. In the first part of the presentation, I will give an overview of the various techniques used for cooling atomic gases. I will also give a brief sketch of the most popular applications. In the second part, I will focus on quantum simulations and in particular on the generation of artificial gauge fields useful in many problems of condensed-matter physics and eventually in high-energy physics.

Short Bio:

David Wilkowski is an associate professor at the University of Nice in France and at the Nanyang Technological University in Singapore. He is a principal investigator at the Centre for Quantum Technologies, at the Centre for Disruptive Photonic Technologies, and at Majulab (CNRS IRL 3654). His research interests are ranging from quantum simulation, quantum sensing, coherent transport to nanophotonics and plasmonics. He is mainly working with ultracold gas systems.