Building the first quantum gas microscope for ultracold bosonic atoms

Since the discovery of topological insulators, many topological phases of matter have been predicted and realised. Ultracold atoms trapped in optical lattices offer a unique setting for investigating the properties of topological phases. The EU-funded TOQUAM project is tapping into the potential of ultracold atoms in optical lattices to study interacting topological insulators. To achieve its objectives, it will build the first quantum gas microscope for bosons that will enable excellent control of atomic interactions and observations of single atoms. The project is expected to detect and
Fields of science

natural sciences > physical sciences > optics > microscopy

natural sciences > physical sciences > condensed matter physics > quantum gases

Keywords

- Artificial gauge fields
- Optical Lattices
- Quantum Gases
- Topology
- Topological insulators
- Fractional Quantum Hall effect
- Strongly interacting systems
- Phase transitions
- Chern insulators

Programme(s)

H2020-EU.1.3. - EXCELLENT SCIENCE - Marie Skłodowska-Curie Actions

H2020-EU.1.3.2. - Nurturing excellence by means of cross-border and cross-sector mobility

Topic(s)

MSCA-IF-2019 - Individual Fellowships

Call for proposal

H2020-MSCA-IF-2019

See other projects for this call

Funding Scheme

MSCA-IF - Marie Skłodowska-Curie Individual Fellowships (IF)

Coordinator
LUDWIG-MAXIMILIANS-UNIVERSITAET MUENCHEN

Net EU contribution
€ 162,806,40

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Region
Bayern > Oberbayern > München, Kreisfreie Stadt

Activity type
Higher or Secondary Education Establishments

Links
Contact the organisation
Website
Participation in EU R&I programmes
HORIZON collaboration network

Other funding
€ 0,00

EC signature date
20 April 2020
Last update:
24 July 2023

Permalink: https://cordis.europa.eu/project/id/897142

European Union, 2023