

Topological Quantum Gas Microscope

Fact Sheet

Project Information

TOQUAM

Grant agreement ID: 897142

[Project website](#)

DOI

[10.3030/897142](https://doi.org/10.3030/897142)

Project terminated on 5 February 2022

EC signature date

20 April 2020

Start date

1 July 2020

End date

30 June 2022

Funded under

EXCELLENT SCIENCE - Marie Skłodowska-Curie Actions

Total cost

€ 162 806,40

EU contribution

€ 162 806,40

Coordinated by

LUDWIG-MAXIMILIANS-
UNIVERSITAET MUENCHEN



Germany

Project description

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 manipulate in situ a wide number of topological Hamiltonians from the weakly to the strongly interacting regime.

Fields of science (EuroSciVoc)

[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](#)

MAIN PROGRAMME

[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

Total cost

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Address

GESCHWISTER SCHOLL PLATZ 1
80539 MUNCHEN

 Germany 

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](#) 

Last update: 24 July 2023

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

European Union, 2025