1. Record Nr. UNISA996461151003316

Autore	JARRY, Pierre
Titolo	Passive and active RF-microwave circuits : course and exercises with solutions / Pierre Jarry, Jacques N. Beneat
Pubbl/distr/stampa	London ; Oxford, : ISTE Press, : Elsevier, 2015
Descrizione fisica	Testo elettronico (PDF) (253 p.)
Disciplina	621.38132
Soggetti	Microelettronica
Lingua di pubblicazione	Inglese
Formato	Risorsa elettronica
Livello bibliografico	Monografia

2. Record Nr. UNINA9910412153503321

Autore	Sachkou Yauhen
Titolo	Probing Two-Dimensional Quantum Fluids with Cavity Optomechanics / / by Yauhen Sachkou
Pubbl/distr/stampa	Cham : , : Springer International Publishing : , : Imprint : Springer, , 2020
ISBN	3-030-52766-2
Edizione	[1st ed. 2020.]
Descrizione fisica	1 online resource (XXI, 147 p. 55 illus., 40 illus. in color.)
Collana	Springer Theses, Recognizing Outstanding Ph.D. Research, , 2190-5053
Disciplina	530.42
Soggetti	Condensed matter Quantum theory Chemistry Materials science Condensed Matter Physics Quantum Physics Chemistry/Food Science, general Materials Science, general
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia

Nota di contenuto	Introduction and Overview -- Optomechanical Platform for Probing Two-Dimensional Quantum Fluids -- Light-Mediated Control Of Superfluid Flow -- Theoretical Investigation of Vortex-Sound Interactions In Two-Dimensional Superfluids -- Observation of Coherent Vortex Dynamics in Two-Dimensional Superfluid Helium -- Summary -- Appendices.
Sommario/riassunto	Superfluid helium is a quantum liquid that exhibits a range of counter-intuitive phenomena such as frictionless flow. Quantized vortices are a particularly important feature of superfluid helium, and all superfluids, characterized by a circulation that can only take prescribed integer values. However, the strong interactions between atoms in superfluid helium prohibit quantitative theory of vortex behaviour. Experiments have similarly not been able to observe coherent vortex dynamics. This thesis resolves this challenge, bringing microphotonic techniques to bear on two-dimensional superfluid helium, observing coherent vortex dynamics for the first time, and achieving this on a silicon chip. This represents a major scientific contribution, as it opens the door not only to providing a better understanding of this esoteric quantum state of matter, but also to building new quantum technologies based upon it, and to understanding the dynamics of astrophysical superfluids such as those thought to exist in the core of neutron stars.