On quantum transport in flat-band materials

Oriekhov, D.

On quantum transport in flat-band materials

Proefschrift

ter verkrijging van
de graad van doctor aan de Universiteit Leiden,
op gezag van rector magnificus prof. dr. ir. H. Bijl,
volgens besluit van het college voor promoties
te verdedigen op woensdag 4 oktober 2023
klokke 13.45 uur

door

Dmytro Oleksandrovich Oriekhov

geboren te Kyiv, Oekraïne
in 1996

Promotores:	Prof. dr. C. W. J. Beenakker
	Prof. dr. I. Adagideli (Sabanci University, Istanbul)
Promotiecommissie:	Prof. dr. J. Aarts
	Dr. L. Fritz (Universiteit Utrecht)
	Dr. E. Greplová (Technische Universiteit Delft)
	Prof. dr. K. E. Schalm
	Prof. dr. ir. H. J. W. Zandvliet (Universiteit Twente)

Casimir PhD Series Delft-Leiden 2023-22
ISBN 978-90-8593-570-4
An electronic version of this thesis can be found
at `https://openaccess.leidenuniv.nl`

The cover shows an artistic representation of some results presented in this thesis: the dynamical gap generation in a flat-band material on the front cover, the spectral functions of a bilayer dice lattice on the back cover; the background shows the dice lattice itself, as a platform that hosts these physical effects. The cover is a digital painting made by Oleg Mykhailov, cousin of the author of the thesis.

To my family.

Contents