

University of Groningen

Applications of the random-state approach to quantum many-body dynamics

Zhao, Peiliang

IMPORTANT NOTE: You are advised to consult the publisher's version (publisher's PDF) if you wish to cite from it. Please check the document version below.

Document Version

Publisher's PDF, also known as Version of record

Publication date:

2017

[Link to publication in University of Groningen/UMCG research database](#)

Citation for published version (APA):

Zhao, P. (2017). *Applications of the random-state approach to quantum many-body dynamics*. [Thesis fully internal (DIV), University of Groningen]. University of Groningen.

Copyright

Other than for strictly personal use, it is not permitted to download or to forward/distribute the text or part of it without the consent of the author(s) and/or copyright holder(s), unless the work is under an open content license (like Creative Commons).

The publication may also be distributed here under the terms of Article 25fa of the Dutch Copyright Act, indicated by the "Taverne" license. More information can be found on the University of Groningen website: <https://www.rug.nl/library/open-access/self-archiving-pure/taverne-amendment>.

Take-down policy

If you believe that this document breaches copyright please contact us providing details, and we will remove access to the work immediately and investigate your claim.

Downloaded from the University of Groningen/UMCG research database (Pure): <http://www.rug.nl/research/portal>. For technical reasons the number of authors shown on this cover page is limited to 10 maximum.

STELLINGEN

Behorende bij het proefschrift

Applications of the random-state approach to quantum many-body dynamics

Peiliang Zhao

8 September 2017

1. The advantage of numerical methods for solving the time-dependent Schrödinger equation is the ability to monitor the dynamics instantaneously, resulting in physical insight. (Chapter 2)
2. The random state approach allows for the calculation of the linear response properties of many-body quantum systems using only the time evolution of a single pure random state. (Chapter 3 and 4)
3. Different types of disorders can be recognized by their fingerprints appearing in the profiles of dc conductivity, carrier mobility, optical spectroscopy, and Landau level spectrum. (Chapter 5)
4. A Bloch-type quantum master equation describes well the dynamics of a spin-1/2 particle in contact with a thermal bath. (Chapter 6)
5. No friction is terrible.
6. It is wrong to think that the task of physics is to find out how Nature is. Physics concerns what we say about Nature. (Niels Bohr)
7. Probability is the main guide of life.
8. There are thousands of reasons to refuse to do something that you do not like. In contrast, one reason is enough to do something that you like.
9. Your life will not be better by chance but could be better by change.
10. 横看成岭侧成峰 ---- A mountain, when viewed in face, may look like a range; when viewed from the side, it may look like a peak. (苏轼)