

Accepted Manuscript

Improved recursive Green's function formalism for quasi one-dimensional systems with realistic defects

Fabian Teichert, Andreas Zienert, Jörg Schuster, Michael Schreiber

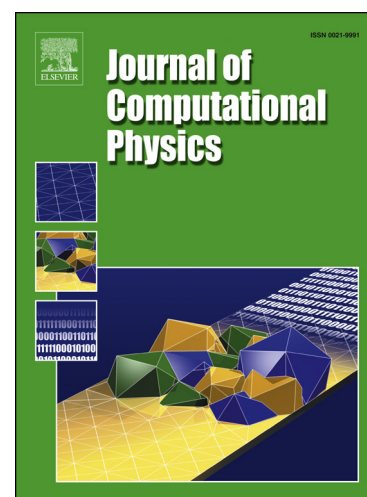
PII: S0021-9991(17)30034-7
DOI: <http://dx.doi.org/10.1016/j.jcp.2017.01.024>
Reference: YJCPH 7086

To appear in: *Journal of Computational Physics*

Received date: 1 December 2015
Revised date: 12 January 2017
Accepted date: 13 January 2017

Please cite this article in press as: F. Teichert et al., Improved recursive Green's function formalism for quasi one-dimensional systems with realistic defects, *J. Comput. Phys.* (2017), <http://dx.doi.org/10.1016/j.jcp.2017.01.024>

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.



Graphical abstract

Improved recursive Green's function formalism for quasi one-dimensional systems with realistic defects

Journal of Computational Physics ••••, •••, •••

Fabian Teichert^{a,c,d,*}, Andreas Zienert^b, Jörg Schuster^{c,d}, Michael Schreiber^{a,d}

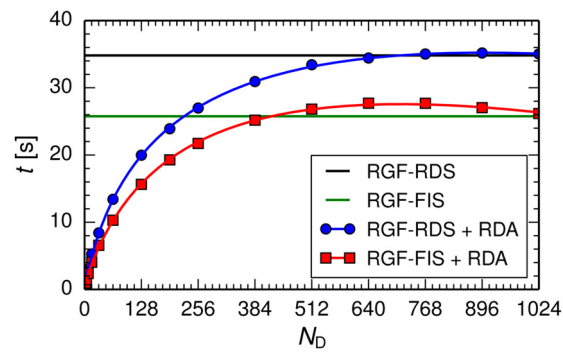
^a Institute of Physics, Faculty of Natural Sciences, Chemnitz University of Technology, 09126 Chemnitz, Germany

^b Center for Microtechnologies, Chemnitz University of Technology, 09126 Chemnitz, Germany

^c Fraunhofer Institute for Electronic Nano Systems (ENAS), 09126 Chemnitz, Germany

^d Dresden Center for Computational Materials Science (DCMS), TU Dresden, 01062 Dresden, Germany

With the improved recursive Green's function formalism + renormalization decimation algorithm (RGF+RDA), the conductance of mesoscopic systems with realistic defects can be computed much faster than with the common RGF. For a constant system length, the calculation time t scales logarithmically with the number of defects N_D . This is true for the recursive decimation scheme (RDS) as well as for the forward iteration scheme (RDS).



Download English Version:

<https://daneshyari.com/en/article/4967595>

Download Persian Version:

<https://daneshyari.com/article/4967595>

[Daneshyari.com](https://daneshyari.com)