

Geert Kapteijns

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Date of birth: 18 December 1992

Place of birth: Amstelveen

Education

- 2018–present University of Amsterdam — PhD candidate in theoretical physics.
Supervisor: Dr. E. Lerner.
My research focuses on amorphous solids and the glass transition. In particular, I am studying the statistical and mechanical properties of low-lying vibrational modes of model computer glasses, with the goal of understanding the role these excitations play in determining the dynamics and thermodynamics of glassy materials.
- 2015–2017 University of Amsterdam — MSc Theoretical Physics.
MSc thesis (60 ECTS): Finite bond dimension scaling with the corner transfer matrix renormalization group method. Supervisor: Dr. P. Corboz.
The corner transfer matrix renormalization group method belongs to the category of tensor network algorithms, which approximate measurable quantities of many-body systems by expressing them as a product of tensors. The accuracy of an approximation is systematically controlled by the dimensions of the tensors. This thesis studies the finite-dimension effects that are introduced by the truncation of the full solution space, which are comparable to effects observed for systems that are finite in one or more spatial dimensions.
- 2014–2015 University of Amsterdam — MSc Software Engineering.
MSc thesis (18 ECTS): Light-weight tools for clustering and classification by file compression. Supervisor: Prof. Dr. J. van Eijck.
- 2011–2014 University of Amsterdam — BSc Physics and Astronomy.
- 2011 Barlaeusgymnasium — science profiles.

Publications

- pre-print Geert Kapteijns, Wencheng Ji, Carolina Brito, Matthieu Wyart, Edan Lerner, ‘*Quick-and-dirty*’ *ultrastable computer glasses*, arXiv:1808.00018
- 2018 Geert Kapteijns, Eran Bouchbinder, Edan Lerner, *Universal Non-phononic Density of States in 2D, 3D, and 4D Glasses*, Phys. Rev. Lett. **121**, 055501
- 2018 Philippe Corboz, Piotr Czarnik, Geert Kapteijns, Luca Tagliacozzo, *Finite Correlation Length Scaling with Infinite Projected Entangled-Pair States*, Phys. Rev. X **8**, 031031

Teaching experience

All courses taught at the University of Amsterdam.

Teaching assistant

- 2018 Statistical Physics of Soft and Living Matter (graduate)
- 2016–2017 Linear Algebra (undergraduate)
- 2016 Calculus (undergraduate)
- 2015–2016 Linear Algebra (undergraduate)
- 2015 Calculus (undergraduate)
- 2014–2015 Linear Algebra (undergraduate)
- 2014 Calculus (undergraduate)
- 2013 Calculus (undergraduate)

Lecturer

- 2014 Summer school of programming
- 2015 Summer school of programming

Presentations

- 2018 Dutch Research School of Theoretical Physics – Dalfsen, The Netherlands.
Title of talk: “Low-energy excitations in disordered solids.”