

Robert Fitzner

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Personal information

Name: Robert Jörg Fitzner

Date of Birth: 27.07.1981

Place of Birth: Berlin, Germany

Citizenship: German

Professional Experience

Eindhoven University of Technology

Eindhoven

Postdoctoral Research Fellow at the Department of Mathematics

09/2015–present

- 70% research for the Institute for Complex Molecular Systems (chemistry) and the department of stochastic
- 30% work for the www.networkpages.nl project. Creating and later maintaining the back-end of the website as well as creating interactive animation to visualise the topic of the articles.

Stockholm University

Stockholm

Postdoctoral Research Fellow at the Department of Mathematics

10/2013–08/2015

- 70% research, institute of epidemiology (spread of disease and information)
- 30% teaching, responsible lecturer for a bachelor and masters course in financial mathematics.

Eurandom / Eindhoven University of Technology

Eindhoven

PhD Student at the Department of Mathematics

09/2008–07/2013

- 80% research in statistical physics, see thesis below.
- 20% teaching, given exercise session for students in statistics and calculus

Forschungsverbund Berlin e.V.

Berlin

System administrator

01/2005–06/2008

Student job: System administration and user support to the accounting office.
(Unix server administration, SAP/R3 support)

Education

Eurandom/Eindhoven University of Technology

Eindhoven

PhD July 2013

09/2008–07/2013

Thesis title: *Non-backtracking lace expansion*

Brief summary: We extend a perturbation technique, known as lace expansion, to study various models of statistical physics at their critical point. The central aim was to prove mean-field results, which oversimplified states how much two points at a given distance influence each other.

Berlin University of Technology

Berlin

dipl.math.oec. (German version of Master)

10/2002–08/2008

Major: finance mathematics

1st minor: computer science (focus on databases)

2st minor: economics (focus on accounting)

Diploma thesis:

Title: *Superhedging under soft constraints in discrete-time market model*

Brief summary: Financial mathematics defines the (theoretical) price of an asset as the value need to start a trading strategy(fond) that replicate the payoff of the asset. In the real market not all theoretical trading strategies are possible or some might simply involve additional costs. We provide a simple, but powerful way, to constrain the trading strategies and the prove a strong result about representing probability measures and that the price can be computed using optimization theory.

Publications

[1]: L Albertazzi, D. van der Zwaag, C.M.A. Leenders, R. Fitzner and R. van der Hofstad. Probing Exchange Pathways in One-Dimensional Aggregates with Super-Resolution Microscopy. (2014), Science Magazine

[2]: R. Fitzner and R. van der Hofstad. The non-backtracking random walk. (2013), Journal of Statistical Physics.

[3]: R. Fitzner and R. van der Hofstad. Generalized approach to the non-backtracking lace expansion. (2017), Probability Theory and Related Fields

[4]: M. Deijfen, R. Fitzner and R. van der Hofstad. Nearest-neighbor percolation function is continuous for $d > 10$, (2017), Electronic Journal of Probability

[5]: M. Deijfen and R. Fitzner. Birds of a feather or opposites attract - effects in network modelling (2017)

Grants and Awards

ICMS Fellowship (2016)
The ICMS pays 50% of my salary for a duration of 2 years.

Magnusons fond by the Royal Swedish Academy of Science, (15.000 SEK) (2014)
Additionally, I received half a dozen smaller grants to cover travel and lodging expenses linked to specific visits and conferences.

Languages

German: Mother tongue

English: Fluent

Dutch: Fluent

French: Basic

Computer skills

Languages: Java,C++, Javascript

Work related: Windows, MacOS, Linux (Red hat, Ubuntu, slashware) and Solaris

Simulator: In the last two year I have create a number of interactive demonstrations for the networkpages.nl projects. A small selection can be found on my website: fitzner.nl/simulator/
Related to my mathematical work I have written simulation of large physical systems, a code sample can be found at fitzner.nl/math/TwoTypeGraphs/index.html