

# DAVID SCHNÖRR

## PERSONAL DATA

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NAME David Schnörr  
DATE OF BIRTH 26.08.1986 in Heidelberg (Germany)  
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## POSITIONS

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OCT 2017 - PRESENT **Postdoctoral Reseacher**, School of Life Sciences, Imperial College London  
MARCH 2016 - SEP 2017 **Postdoctoral Reseacher**, School of Informatics, University of Edinburgh

## EDUCATION

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APRIL 19, 2016 **Doctoral Thesis** (defense): “Approximation methods and inference for stochastic biochemical kinetics”, Institute of Quantitative Biology, Biochemistry and Biotechnology, University of Edinburgh  
2013 - 2016 **PhD**, University of Edinburgh.  
Supervisors: Ramon Grima and Guido Sanguinetti  
2012 - 2013 **Master Thesis**: “Error Estimates for a Functional Renormalization Group Approach to the BCS-BEC Crossover”  
Advisor: Christof Wetterich, Inst. of Theoretical Physics, Heidelberg University  
2006 - 2012 **German Diploma in Physics**, Heidelberg University,  
Final Mark: First  
2009 - 2010 **International Diploma**, Imperial College London  
JUNE 2006 **Abitur**, Carl-Benz Gymnasium Ladenburg (Grade: 1.0<sup>1</sup>)

## AWARDS

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2013 – 2016 Scholar of the Biotechnology and Biological Sciences Research Council  
2009 – 2012 Scholar of the Studienstiftung des Deutschen Volkes (German National Academic Foundation)  
JUNE 2006 Ferry-Porsche-Award for Mathematics and Physics  
Book Award of the Deutsche Physikalische Gesellschaft (DPG)

## TEACHING

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2015 Tutorial on Mathematics and Physics for Biologists (Edinburgh)  
2014 Tutorial I on Mathematics and Physics for Biologists (Edinburgh)  
2014 Tutorial II on Mathematics and Physics for Biologists (Edinburgh)  
2012 Tutorial I on Mathematics for Natural Scientists (Heidelberg)  
2012 Tutorial II on Mathematics for Natural Scientists (Heidelberg)  
2010 – 2011 Tutorial on Theoretical Physics II (Heidelberg)  
2008 – 2009 Tutorial on Theoretical Physics I (Heidelberg)

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<sup>1</sup>Range: 1.0 (best), 1.3, 1.7, ..., 4.0 (worst).

## REVIEWER FOR

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- The Journal of Chemical Physics
- PLOS One
- Journal of Statistical Mechanics: Theory and Experiment
- Journal of Physics A: Mathematical and Theoretical
- Journal of The Royal Society Interface
- AMMCS-2017 Conference Proceedings
- Bulletin of Mathematical Biology
- Conference on Computational Methods in Systems Biology
- Entropy

## TALKS

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- **(invited)** “Using ideas from statistics for analysing (spatio-temporal) stochastic processes”, CeNoS Colloquium, May 15, 2018, Center for Nonlinear Science, University of Münster, Germany.
- **(invited)** “Modelling the RNA life cycle in yeast under stress from RNA-protein binding data”, BIOMS open seminar, April 5, 2018, BioQuant, Heidelberg University, Germany.
- **(invited)** “Using ideas from statistics for analysing (spatio-temporal) stochastic processes”, Biophysics and Soft Matter Seminar, June 12, 2017, Simon Fraser University, Canada.
- **(invited)** “Using ideas from statistics for analysing (spatio-temporal) stochastic processes”, Industrial and Applied Mathematics Seminar, April 27, 2017, University of Oxford, UK.
- **(invited)** “Cox process representation and inference for stochastic reaction-diffusion processes”, Biomathematical Seminar, October 4, 2016, Imperial College London, UK.
- “Cox process representation and inference for stochastic reaction-diffusion processes”, 10th European Conference on Mathematical & Theoretical Biology and SMB Annual Meeting, July 15, 2016, Nottingham, UK.
- **(invited)** “Cox process representation and inference for stochastic reaction-diffusion processes”, Stochastic Dynamical Systems in Biology: Numerical Methods and Applications, June 8, 2016, Newton Institute, University of Cambridge, UK.
- “Breakdown of the chemical Langevin equation and moment closure approximations for stochastic chemical kinetics”, Mathematical Trends in Reaction Network Theory, July 2, 2015, University of Copenhagen, Denmark.

## PUBLICATIONS

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- N. S. Scholes<sup>2</sup>, **D. Schnoerr**<sup>2</sup>, M. Isalan, M. P. H. Stumpf, Turing patterns are common but not robust. *bioRxiv preprint* bioRxiv: 352302 (2018).
- D. Milios, G. Sanguinetti, and **D. Schnoerr**. Probabilistic model checking for continuous time Markov chains via sequential Bayesian inference. *International Conference on Quantitative Evaluation of Systems* (in print). *arXiv preprint* arXiv:1711.01863 (2017).
- **D. Schnoerr**, B. Cseke, G. Sanguinetti, and R. Grima. Efficient low-order approximation of first-passage time distributions. *Physical Review Letters* 119 (2017): 210601.
- C. Cianci, **D. Schnoerr**, A. Piehler, and R. Grima. An alternative route to the system-size expansion. *Journal of Physics A: Mathematical and Theoretical* 50 (2017): 395003.

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<sup>2</sup>B. S. Scholes and D. Schnoerr contributed equally.

- <sup>3</sup>**D. Schnoerr**, G. Sanguinetti, and R. Grima. Approximation and inference methods for stochastic biochemical kinetics - a tutorial review. *Journal of Physics A: Mathematical and Theoretical* 50 (2017): 093001.
- B. Cseke<sup>4</sup>, **D. Schnoerr**<sup>4</sup>, M. Opper, and G. Sanguinetti. Expectation propagation for continuous time stochastic processes. *Journal of Physics A: Mathematical and Theoretical* 49 (2016): 494002.
- **D. Schnoerr**, R. Grima, and G. Sanguinetti. Cox process representation and inference for stochastic reaction-diffusion processes. *Nature Communications* 7 (2016): 11729.
- **D. Schnoerr**, G. Sanguinetti, and R. Grima. Comparison of different moment-closure approximations for stochastic chemical kinetics. *The Journal of Chemical Physics* 143.18 (2015): 185101.
- **D. Schnoerr**, G. Sanguinetti, and R. Grima. Validity conditions for moment closure approximations in stochastic chemical kinetics. *The Journal of Chemical Physics* 141.8 (2014): 084103.
- **D. Schnoerr**, G. Sanguinetti, and R. Grima. The complex chemical Langevin equation. *The Journal of Chemical Physics* 141.2 (2014): 024103.
- **D. Schnoerr**, I. Boettcher, J. M. Pawłowski, and C. Wetterich. Error estimates and specification parameters for functional renormalization. *Annals of Physics* 334 (2013): 83-99.

David Schnörr  
 London, July 23, 2018

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<sup>3</sup>Selected for the “Highlights 2017 collection” of *Journal of Physics A*.

<sup>4</sup>B. Cseke and D. Schnoerr contributed equally.