

**Curriculum Vitæ**  
**Dustin Lazarovici**

May 2018

Université de Lausanne  
Faculté des lettres, Section de philosophie  
CH - 1015 Lausanne  
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**Employment**

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|--------------|---|
| 2017-present | Graduate assistant (assitant diplômé). Department of Philosophy, Université de Lausanne (UNIL), Switzerland. Director: Michael Esfeld.  |
| 2016-2017    | Post-Doctoral fellow. Department of Philosophy, Université de Lausanne (UNIL), Switzerland. Supported by a Feodor Lynen Research Fellowship of the Alexander von Humboldt Foundation. Director: Michael Esfeld. |

**Education**

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|--------------|--|
| 2017-present | PhD student. Department of Philosophy, Université de Lausanne (UNIL), Switzerland. Project: Typicality as a way of reasoning in science and metaphysics. Supervisor: Michael Esfeld. |
| 2015         | Dr. rer. nat. ( <i>summa cum laude</i> ), Mathematics, LMU Munich<br>Title of dissertation: "Mean field limits for charged particles". Supervisor: Detlef Dürr.                      |
| 2011         | Diploma (with distinction), Mathematics, LMU Munich  |
| 2011         | Diploma (with distinction), Physics, LMU Munich  |

**Research Interests**

- Philosophy of Physics: Relativity and Nonlocality, Ontology of Quantum Mechanics, Foundations of Statistical Mechanics, Arrow of Time
- Philosophy of Science: Laws of Nature, Probabilistic and Non-Causal Reasoning
- Metaphysics: Space and Time, Primitive Ontology, Modality

**Grants and Scholarships**

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| 2016–2017 | Feodor Lynen Research Fellowship of the Humboldt Foundation  |
| 2015      | Research Grant by the Cogito Foundation.<br>Project: „The fundamental ontology of the natural world“. Director: Michael Esfeld |
| 2012–2015 | PhD Scholarship, Studienstiftung des deutschen Volkes<br>(German Academic Scholarship Foundation)                              |
| 2011–2012 | Young Researcher Scholarship of the Parmenides Foundation  |
| 2005–2011 | Scholarship of the Studienstiftung des deutschen Volkes  |

**Academic Stays and International Experience**

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| April 2012 | Rutgers University, NJ. COST short-term scientific mission. Host: Sheldon Goldstein |
| 2007-2008  | McGill University, Montreal, Canada. Visiting Student                               |

## Publications

### Books

- Detlef Dürr and Dustin Lazarovici: *Verständliche Quantenmechanik. Drei mögliche Weltbilder der Quantenphysik.* (Textbook on foundations of quantum mechanics in German.) Springer-Spektrum, 2018. ISBN 978-3-662-55888-1
- Contributions to: Michael Esfeld and Dirk-André Deckert: *A minimalist ontology of the natural world.* Routledge Studies in the Philosophy of Mathematics and Physics. Routledge, 2018. ISBN 978-1-138-30730-8

### Peer-Reviewed Journal Articles

- Dustin Lazarovici, Andrea Oldofredi and Michael Esfeld: "Observables and unobservables in quantum mechanics: How the no-hidden-variables theorems support the Bohmian particle ontology," *Entropy* 20(5) (2018), Special Issue: Emergent Quantum Mechanics – David Bohm Centennial Perspectives. DOI: 10.3390/e20050381
- "Against Fields," *European Journal for Philosophy of Science* 8(2) (2018), pp. 145-170. DOI: 10.1007/s13194-017-0179-z
- Michael Esfeld, Dustin Lazarovici, Vincent Lam, and Mario Hubert: "The Physics and Metaphysics of Primitive Stuff," *British Journal for the Philosophy of Science* 68 (2017), pp. 131-168. DOI: 10.1093/bjps/axv026
- Dustin Lazarovici and Peter Pickl: "A mean-field limit for the Vlasov-Poisson system," *Archive for Rational Mechanics and Analysis* 225(3) (2017), pp. 1201-1231. DOI:10.1007/s00205-017-1125-0
- "The Vlasov-Poisson dynamics as the mean-field limit of extended charges," *Communications in Mathematical Physics* 347(1) (2016), pp. 271-289. DOI: 10.1007/s00220-016-2583-1
- Andrea Oldofredi, Dustin Lazarovici, Dirk-André Deckert and Michael Esfeld: "From the universe to subsystems: Why quantum mechanics appears more stochastic than classical mechanics," *Fluctuations and Noise Letters* 15:03 (2016). DOI: 10.1142/S0219477516400022
- Dustin Lazarovici and Paula Reichert: "Typicality, Irreversibility and the Status of Macroscopic Laws," *Erkenntnis* 80 (2015), pp. 689-716. DOI: 10.1007/s10670-014-9668-z
- "A relativistic retrocausal model violating Bell's inequality," *Proceedings of the Royal Society A* 471 (2015). DOI: 10.1098/rspa.2014.0454
- Michael Esfeld, Dustin Lazarovici, Mario Hubert, and Detlef Dürr: "The ontology of Bohmian mechanics," *The British Journal for the Philosophy of Science* 65(4) (2014), pp. 773-796. DOI: 10.1093/bjps/axt019

### Articles in Books and Conference Proceedings

- "Relativistic Interactions and the Structure of Time," in: A. von Müller, T. Filk (eds.), *Re-Thinking Time at the Interface of Physics and Philosophy.* On thinking Vol. 4, Springer (2015).
- "Lost in Translation: A Comment on 'Noncommutative Causality in Algebraic Quantum Field Theory'," in: Galavotti et.al. (eds.), *New Directions in the Philosophy of Science. The Philosophy of Science in a European Perspective,* Vol. 5, Springer (2014).
- Detlef Dürr and Dustin Lazarovici: "Quantenphysik ohne Quantenphilosophie," in: M. Esfeld (ed.), *Philosophie der Physik.* Suhrkamp, Berlin (2012), pp. 110-134.
- Detlef Dürr and Dustin Lazarovici: "Der Dialog des Demokrit," in: J. Nida-Rümelin and E. Özmen (eds.), *Welt der Gründe. Proceedings des XXII. Deutschen Kongresses für Philosophie,* Meiner Verlag (2012), pp. 1207-1217.

### Preprints and Other Publications

- “A particle approximation for the relativistic Vlasov-Maxwell dynamics.” (2016) Preprint: arXiv:1602.07251
- “Time Evolution in the external field problem of Quantum Electrodynamics.” Diploma thesis, LMU München (2011). Online version: arXiv:1310.1778

### Book Reviews

- Review of Shan Gao’s “The Meaning of the Wave Function: In Search of the Ontology of Quantum Mechanics.” *International Studies in the Philosophy of Science* 31(3) (2017), pp. 321-324. DOI: 10.1080/02698595.2018.1463694

### Under Review

- “Super-Humeanism: A starving ontology.”
- “Discussion Note: Confusions about Boltzmann, Gibbs and the basics of Statistical Mechanics.”

### Works in Progress

- Structural Spacetime Monism
- Arrow of Time without a Past Hypothesis (with Paula Reichert)
- Reconciling Nonlocality and Relativity: Bohmian Models
- Typicality and the Metaphysics of Laws

### **Teaching Experience**

#### Graduate courses taught

Extracurricular Seminar: Foundations of Mathematics for philosophers. UNIL, 2018

Seminar: Foundations of Mathematics for teacher trainees. LMU Munich, 2012 – 2014

#### Teaching Assistant with participation in teaching

Philosophy, Epistemology and History of Science. EPFL / UNIL Lausanne, 2016 – present

#### Invited Lectures

School: Fundamental Problems of Quantum Physics. ICTS Bangalore, 2016 (4 lectures)

Guest Lecture “The De-Broglie Bohm Theory.” Advanced Philosophy of Physics, MCMP Munich, 2014 (1 lecture)

Guest Lecture “The De-Broglie Bohm Theory.” Advanced Philosophy of Physics, MCMP Munich, 2013 (1 lecture)

Teacher Training: Mathematical Foundations of Quantum Mechanics. MFO Oberwolfach, 2012 (3 lectures)

#### Short Courses and Workshops taught

Working group: “Primitive Ontology of Matter and Laws.” 5<sup>th</sup> International Summer School in Philosophy of Physics. Saig, 2017

Working group: “Typicality as the foundation of probabilities in physics.” 2<sup>nd</sup> International Summer School in Philosophy of Physics. Saig, 2014

Discussion group: “Bell’s Theorem.” Summer School Foundations of Quantum Mechanics. Sesto, 2014

Working group: “Entropy and the Arrow of Time.” Summer School Physics and Philosophy of Time. Saig, 2013

#### Teaching Assistant

Seminar: The ontology of physics. LMU Munich, 2015

Analysis I. LMU Munich, 2011

## Tutoring

Various undergraduate courses in mathematics. LMU Munich, 2005-2011

## **Selected Talks**

### *Typicality and laws of nature*

Workshop: Essentialism and realism in the metaphysics of science, UNIL Lausanne, 2018

### *Typicality and Probability*

Kolloquium Wissenschaftsphilosophie, Uni Bern, 2017

### *Wigner's false friends*

Workshop: Understanding Quantum Mechanics, UNIL Lausanne, 2017

### *Against Fields*

EPSA 17, Exeter, 2017

ECAP9, Munich, 2017

BSPS Annual Meeting, Edinburgh, 2017

### *Spacetime is One Whole – Priority Monism meets Structural Realism*

SMS 3<sup>rd</sup> Annual Conference, New York, 2017

Tübingen Master Class with Jonathan Schaffer, Tübingen, 2017

The 91st Joint Session of the Aristotelian Society, Edinburgh, 2017

### *Thermodynamic Arrow without a Past Hypothesis*

Conference: The Second Law, MCMP Munich, 2017

### *Relativity, Nonlocality and the Consequences*

SILFS 2017, Bologna, 2017

### *A mean field limit for the Vlasov-Maxwell system*

Autumn School Mathematical Foundations of Physics, LMU Munich, 2016

### *The wave function in a relativistic world*

4th international summer school in philosophy of physics, Saig, 2016

### *Mean field limits for charged particles*

Seminar Applied Analysis, Marseille, 2016

### *A Time-symmetric Relativistic Model Violating Bell's Inequality*

Conference: Free Will and Retrocausality in a Quantum World, Cambridge, 2014

Workshop: Is quantum theory exact? Laboratori Nazionali di Frascati, 2014

### *Are 'macroscopic laws' laws? - Typicality as the basis for statistical reasoning in physics*

Workshop: Reduction and Emergence in Physics, MCMP & CAS, Munich, 2013

### *What are Quantum States?*

Workshop: The metaphysics of contemporary physics, Lausanne, 2012

### *On external field QED - And why it doesn't exist (yet)*

Fourth School and Workshop on Mathematical Methods in Quantum Mechanics, Bressanone, 2011

## Commenting

Commentator for Neil Dewar "Algebraic Structuralism"

SMS 3<sup>rd</sup> Annual Conference, New York, 2017

Commentator for Gabor Hofer-Szabo "Noncommutative Causality in Algebraic Quantum Field Theory"

Workshop: The metaphysics of contemporary physics, UNIL Lausanne, 2012

## **Service to the Profession**

### Public Lectures

*Philosophie der Physik. Pizza, Philosophy, and Science* (organized by *reach*), Bern, 2018

*Das mathematische Kontinuum und die Paradoxien des Zenon*. Mathematik am Samstag, LMU Munich, 2012

### Selection Committee

Selection Seminar of the German Academic Scholarship Foundation. (2012, 2014, 2015, 2017, 2018)

### Journal Referee

Communication in Mathematical Physics  
Entropy  
Erkenntnis  
European Journal for Philosophy of Science  
Fluctuations and Noise Letters  
Foundations of Physics  
Journal of Physics A  
Philosophy of Science

### Further Services

Creation of websites and flyers for the workgroup “Philosophie des sciences”, UNIL, 2018 - present

Session chair. Joint Session of the Aristotelian Society, Edinburgh, 2017

Roundtable discussion chair. The Autumn School Mathematical Foundations of Physics, LMU Munich, 2016

IT-Devices Manager. Workgroup Mathematical Foundations of Physics. LMU, Munich, 2013-2014

## **Professional Affiliations**

The Aristotelian Society  
The British Society for the Philosophy of Science (BSPS)  
European Philosophy of Science Association (EPSA)

## **Civic Affiliations**

reach – research and technology in switzerland  
Humboldt-Club (German alumni association of the Humboldt foundation)

## **Languages**

German (native speaker)  
English (near native)  
Romanian (fluent in speaking)  
French (very good command)  
Italian (basic skills)

## **References**

Michael Esfeld, UNIL	<a href="mailto:Michael-Andreas.Esfeld@unil.ch">Michael-Andreas.Esfeld@unil.ch</a>
Detlef Dürr, LMU München	<a href="mailto:duerr@math.lmu.de">duerr@math.lmu.de</a>
Sheldon Goldstein, Rutgers	<a href="mailto:oldstein@math.rutgers.edu">oldstein@math.rutgers.edu</a>
Jeffrey Barrett, UCI	<a href="mailto:j.barrett@uci.edu">j.barrett@uci.edu</a>