

Curriculum Vitæ

Dustin Lazarovici

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Employment

- 09/2017 – present Graduate assistant (assitant diplômé). Department of Philosophy, Université de Lausanne (UNIL), Switzerland. Director: Michael Esfeld.
- 01/2016 – 07/2017 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

- 09/2017 – 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.
- 12/2015 Dr. rer. nat. (*summa cum laude*), Mathematics, LMU Munich
Title of dissertation: “Mean field limits for charged particles.” Supervisor: Detlef Dürr.
- 12/2011 Diploma (with distinction), Mathematics, LMU Munich
- 01/2011 Diploma (with distinction), Physics, LMU Munich

Research Interests

- Philosophy of Physics: Relativity and Nonlocality, Foundations 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

- 2019 Doc.Mobility Fellowship of the Swiss National Science Foundation (SNSF)
- 2016 – 2017 Feodor Lynen Research Fellowship of the Humboldt Foundation
- 2015 Research Grant by the Cogito Foundation. (Grant holder: Michael Esfeld)
- 2012 – 2015 PhD Scholarship, Studienstiftung des deutschen Volkes (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

- 02/2019 – 07/2019 Columbia University, NY. Doc.Mobility Fellowship (SNSF). Host: David Z. Albert
- 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

Peer-Reviewed Journal Articles

Dustin Lazarovici and Mario Hubert: “How Quantum Mechanics can consistently describe the use of itself,” *Scientific Reports* 9: 470 (2019). Open Access: <https://www.nature.com/articles/s41598-018-37535-1>

“Super-Humeanism: A starving ontology,” *Studies in History and Philosophy of Science Part B: Studies in History and Philosophy of Modern Physics.* (In Press). DOI: 10.1016/j.shpsb.2018.07.001

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: 20140454 (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

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

“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 (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

Dustin Lazarovici and Michael Esfeld: “Quining Light.”

“Discussion Note: Confusions about Boltzmann, Gibbs and the basics of Statistical Mechanics.”

Dustin Lazarovici and Paula Reichert: “Arrow of time without a Past Hypothesis.” To appear in: V. Allori (Ed.), *Statistical Mechanics and Scientific Explanation: Determinism, Indeterminism and Laws of Nature*

Works in Progress

Structural Spacetime Monism

Typicality and the Metaphysics of Laws

Reconciling Nonlocality and Relativity

Teaching Experience

Graduate courses taught

Extracurricular Seminar: Foundations of Mathematics for Philosophers. UNIL, Spring term 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 – 2018
(3-4 lectures, supervision of student projects)

Invited Lectures

Summer Academy of the Swiss Study Foundation: „Wahrscheinlichkeiten, Determinismus und freier Wille in Naturwissenschaften und Philosophie,“ Magliaso, 2018 (4 lectures)

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

Guest Lecture “The De Broglie-Bohm Theory.” Advanced Philosophy of Physics, MCMP, 2013 –2014 (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.” 5th International Summer School in Philosophy of Physics. Saig, 2017

Working group: “Typicality as the foundation of probabilities in physics.” 2nd 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 for various undergraduate courses in mathematics. LMU Munich, 2005 – 2011

Selected Talks

The Frauchiger-Renner theorem

Oberseminar Mathematische Physik, LMU München, Dec. 2018

Super-Humeansim: A starving ontology

SMS 4th Annual Conference, Milano, 2018

The wave function in a relativistic world

International Workshop on Multi-Time Wave Functions, Rutgers, 2018

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

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 3rd 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

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 3rd 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

Services to the Profession

Public Lectures and Outreach

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

Probstudium Physik (trial studies for school pupils), LMU Munich 2006

Selection Committee

Selection Seminar of the German Academic Scholarship Foundation, 2012, 2014-2018

Journal Referee

Acta Analytica, Canadian Journal of Physics, Communication in Mathematical Physics, Entropy, Erkenntnis, European Journal for Philosophy of Science, Fluctuations and Noise Letters, Foundations of Physics, Journal for General Philosophy of Science, Journal of Physics A, Journal of Statistical Physics, Physica Scripta, Philosophy of Science, Studies in History and Philosophy of Modern Physics, The British Journal for the Philosophy of Science, The European Physical Journal B, Synthese

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 (regional group leader Lausanne)

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

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Detlef Dürr, LMU München

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Sheldon Goldstein, Rutgers

oldstein@math.rutgers.edu

Jeffrey Barrett, UCI

j.barrett@uci.edu