

# Marco Forgione

POSTDOC · PHILOSOPHY

University of Milan, Statale

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## Area of Expertise

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AOS: Philosophy of Physics, History and Philosophy of Science.

AOC: General Philosophy of Science, Logic.

## Professional Experience

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2023-2026 **Postdoctoral Fellowship**, Cosmos Project (Cariplo Foundation); PI: Dr. Silvia De Bianchi. University of Milan Statale

2022-2023 **Postdoctoral Fellowship**, ERC Project: Proteus - Paradoxes and Metaphors of Time in Early Universe(s); PI: Dr. Silvia De Bianchi. University of Milan Statale

## Education

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### University of South Carolina

PHD: PHILOSOPHY

March, 2022

- Advisor: Michael Stöltzner
- Committee Members: Michael Dickson, Richard Healey, Alexander Blum

### University of Florence, Italy

MS: LOGIC, PHILOSOPHY, AND HISTORY OF SCIENCE

July, 2015

- Advisor: Elena Castellani
- 110/110 Cum Laude

### University of Padova, Italy

BS: PHILOSOPHY

October, 2012

- Advisor: Pierdaniele Giaretta
- 110/110 Cum Laude

## Publications

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### BOOKS

Edited Volume. Time and Timelessness in Fundamental Physics and Cosmology. eds. S. De Bianchi, M. Forgione, L. Marongiu. Springer, 2024. ISBN 978-3-031-61859-8.(Fundamental Theories of Physics).

### PEER-REVIEWED

Forgione, M., (2024). Feynman diagrams: visualization of phenomena and diagrammatic representation. European Journal for Philosophy of Science 14, 48.

Forgione, M., (2024). Group field theories: decoupling spacetime emergence from the ontology of non-spatiotemporal entities. European Journal for Philosophy of Science, 14(2), 22.

Forgione, M., (2024) Causation as Constraints in Causal Set Theory. in: Time and Timelessness in Fundamental Physics and Cosmology. eds. S. De Bianchi, M. Forgione, L. Marongiu. Springer, 2024. - ISBN 978-3-031-61859-8. (Fundamental Theories of Physics).

Forgione, M., (2023) Feynman's Theorizing and Visualization (proceedings silfs 2023, ISBN: 978-1-84890-455-2), Current Topics in Logic and the Philosophy of Science. Francesco Bianchini, Vincenzo Fano, Pierluigi Graziani, eds. 2024. College Publications.

- Forgione, M., (2022). Feynman’s spacetime view in quantum electrodynamics. *Studies in History and Philosophy of Science*, 93, 136-148.
- Forgione, M., (2020). Path Integrals and Holism. *Foundations of Physics*, 50(8), 799-827.
- Forgione, M., (2020). The philosophical underpinning of the absorber theory of radiation. *Studies in History and Philosophy of Science Part B: Studies in History and Philosophy of Modern Physics*, 72, 91-106

## ARTICLES

- S. De Bianchi, M. Forgione, L. Marongiu. (2024). Introduction. *Time and Timelessness in Fundamental Physics and Cosmology*. eds. S. De Bianchi, M. Forgione, L. Marongiu. Springer, 2024. ISBN 978-3-031-61859-8. (Fundamental Theories of Physics).
- Forgione, M., (2018). Book Review. Marc Lange: *Because Without Cause: Non-causal explanations in Science and Mathematics*. *Journal for General Philosophy of Science / Zeitschrift für Allgemeine Wissenschaftstheorie* 49 (3):487-490.

## DISSEMINATION & OUTREACH

- Forgione, M. (2024, September 05). *Cosmology can’t understand the expanding universe*. IAI News. /articles/cosmology-cant-understand-the-expanding-universe-auid-2939
- Forgione, M., (2023) Interview with Professor Peter Galison. <https://cosmosproject.unimi.it/2024/01/10/interview-with-prof-peter-galison>

## UNDER REVIEW

Forgione, M. *Hubble Tension and Robustness*

## IN PREPARATION

- Kuhn and Formal Ontologies: Between Incommensurability and Interoperability.
- On the Interplay Between Partial Differential Equations, Initial/Boundary Conditions and Scientific Explanation.
- We Need Better Robustness: A Cosmology Case Study
- Causal Set Theory, Dynamical Theories of Time, and Eternalism. Not Quite!

## Visiting, Awards, & Grants

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- 2020 **DAAD One-Year Research Grant**, Munich Center of Mathematical Philosophy & Max Planck Institute für Wissenschaftsgeschichte, Berlin
- 2019 **Richard T. Greener Award in Graduate Studies in Philosophy**, University of South Carolina
- 2019 **Sparc Grant**, University of South Carolina. Visiting: Universitat Autònoma de Barcelona

## Teaching Experience

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|----------|---|-----------------------|
| Sp. 2022 | <b>Instructor</b> , Engineering Ethics. Phil 325.                   | <i>UofSC</i>          |
| Fa. 2021 | <b>Instructor</b> , Communicating Moral Issues. Phil211.            | <i>UofSC</i>          |
| Sp. 2021 | <b>Instructor</b> , Engineering Ethics. Phil 325.                   | <i>(Online) UofSC</i> |
| Fa. 2018 | <b>Instructor</b> , Introduction to Formal Logic. Phil 114.         | <i>UofSC</i>          |
| Sp. 2018 | <b>Instructor</b> , Introduction to Formal Logic. Phil 114.         | <i>UofSC</i>          |
| Fa. 2020 | <b>Instructor</b> , Communicating Moral Issues. Phil 213.           | <i>(Online) UofSC</i> |
| Sp. 2018 | <b>Instructor</b> , Introduction to Formal Logic. Phil 114.         | <i>UofSC</i>          |
| Fa. 2019 | <b>Teaching Assistant</b> , Contemporary Moral Problems. Phil 211.  | <i>UofSC</i>          |
| Fa. 2017 | <b>Teaching Assistant</b> , Environmental Ethics. Phil 322.         | <i>UofSC</i>          |
| Fa. 2016 | <b>Teaching Assistant</b> , Introduction to Formal Logic. Phil 114. | <i>UofSC</i>          |

## Presentations

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## INVITED TALKS

April, 2025. *Can We Use Robustness Analysis to Evaluate the Hubble Tension?* Invited talk: UPAC Colloquium, Utrecht

November, 2023. *Causation as Constraints in Causal Set Theory*. Invited talk: Symposium on Time in Quantum Gravity, MCMP Munich.

March 2023. *Feynman's Quantum Electrodynamics*. Guest Lecture, Philosophy of Physics, University of Milan Statale.

May, 2018. *Least action principle, path integrals and metaphysical considerations* Seminar Series, University of Florence, Italy.

## SELECTED CONTRIBUTED PRESENTATIONS

June 2024. IAPT9, Lugano. Causal Set Theory and Growing Block, Not Quite.

February 2024. DPG, Berlin. Causal Set Theory and Growing Block.

July 2023. CLMPST-17, Buenos Aires. Group Field Theory and Phase Transition Realism.

March 2023. &HPS9, Columbia, South Carolina. Visualization and Understanding of Quantum Phenomena.

June 2022. SILFS-5, University of Milan Bicocca. Visualization and Intelligibility in Feynman Diagrams.

October 2021. Foundations of Physics, Paris. Emergent Trajectories and Path Integrals.

May 2021. CSHPS, Online. The Spacetime View in Feynman's QED.

July 2020. IAPT-7, Barcelona. Absorber Boundary Conditions and the Emergence of Time Asymmetry.

November 2018. PSA, Seattle. Holism and Path Integrals.

July 2018. Summer School: Epistemology of LHC, Wuppertal. Path Integrals, Holism, and Wave-Particle Duality.

## Professional Activities

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### EVENTS ORGANIZATION

Second History & Philosophy of Cosmology Conference, University of Milan, 10-13 September 2024.

Perspectives on Time and Atemporality in Cosmology, and Natural Sciences, University of Milan, 17-19 July 2023.

First History and Philosophy of Cosmology, University of Milan, 17-19 September 2023.