JEAN-FRANÇOIS VADURET

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EDUCATION

Uppsala Universitet — Uppsala, Sweden
M.Sc. String Theory and Quantum Field Theories — March 2021
Dissertation: Holographic RG-flows and the domain-wall/cosmology correspondence

Aix-Marseille Université and **Université de Poitiers** — Marseille/Poitiers, France
B.Sc. Physics, Graduated at the top of the class with High Honours — May 2017

Lycée Émile Combes — Pons, France
High School Graduation with Highest Honors, Major: Mathematics — July 2014

RESEARCH EXPERIENCE

Uppsala Universitet, Physics and Astronomy Department : — 2017-present

- **"Holographic RG-flows and the domain-wall/cosmology correspondence"**

  Key achievements: generalized holographic renormalization to study spacetimes relevant to cosmology, with results to be published.

  Carried out challenging differential geometry calculations by hand and with Mathematica.

  Applied results to an example of RG-flow to extract physical knowledge out of the results.

- **"GPPZ and the Holographic Triforce against Scalars"**

  Key achievements: developed gauge invariant cosmological perturbation formalism for spacetimes relevant to holography.

  Found new results for inert scalars in holographic RG-flows.

  Presented findings to an audience of $\sim$ 40 people from and outside academia in a comprehensive talk to popularise scientific findings.

- **"The theory of the perfect scientific article"**

  Key achievements: investigated seminal literature on scientific writing.

  Lead conversations with paper-publishing scientists of all levels to understand what makes a good paper.

  Synthesized acquired knowledge and wrote a comprehensive report detailing article-writing best practices.

Aix-Marseille Université, Centre de Physique Théorique CNRS — Summer 2017

- **"Interacting dark matter as a solution to the H_0 tension"**

  Key achievements: investigated and replicated results from seminal literature on dark energy as scalar field.

  First step in observational astrophysics and understood observation techniques and models to compute the Hubble parameter

PUBLICATIONS

- J.-F. Vaduret, *GPPZ and the Holographic Triforce against Scalars*, (2019) [urn:nbn:se:uu:diva-397107]

SCHOLARSHIPS

- *Merit Scholarship*, awarded by the Government of France for graduating high school with the highest honors

TALKS & CONFERENCES

- Attended workshop Navigating the Swampland, Madrid, September 2019
- "Holography and Extra-dimensions" talk given at Uppsala University, November 14th, 2019
- Attended Essen Lectures: Geometry, Black holes and Dark Matter, June 2019
- Attended Nordita Winter School on Theoretical Particle Physics, January 2019
- "A brief review of attempts to solve the Hubble Tension" talk given at Uppsala University, October 22nd, 2018

REFEREES

Prof. Thomas Van Riet, Professor, Theoretical Physics, Department of Physics and Astronomy, KU Leuven. Email: thomas.vanriet@kuleuven.be

Dr. Marjorie Schillo, Research Fellow, Theoretical Physics, Department of Physics and Astronomy, Uppsala Universitet. Email: marjorie.schillo@physics.uu.se

Prof. Lisa Freyhult, Professor, Theoretical Physics, Department of Physics and Astronomy, Uppsala Universitet. Email: lisa.freyhult@physics.uu.se