

Dimitrios Irodotou - Curriculum Vitæ

RESEARCH

Modelling the Co-Evolution of Accretion Discs and Black Holes
Investigating the Formation and Growth of Classical/Pseudo Bulges and Bars

GROUPS

- 2021-Present* Laser Interferometer Space Antenna ([LISA](#)) mission
- 2021-Present* [KETJU](#) project
- 2019-Present* First Light And Reionization Epoch Simulations ([FLARES](#))
- 2017-2019* [L-GALAXIES](#) Semi-Analytic Model

ACADEMIC POSITIONS

- 2021-Present* **ERC-funded Postdoctoral Researcher**
University of Helsinki | Helsinki, Finland
- **Group leader:** Prof. Peter H. Johansson

EDUCATION

- 2017-2021* **Ph.D. in Astronomy**
University of Sussex | Brighton, United Kingdom
- **Thesis:** *The Characterisation and Origin of the Morphology of Galaxies Across Multiple Scales and Epochs* ([pdf](#))
 - **Supervisors:** Prof. Peter A. Thomas and Dr. Mark T. Sargent
- 2015-2016* **M.Sc. in Astronomy (Distinction)**
University of Sussex | Brighton, United Kingdom
- **Thesis:** *Investigating the Size and Angular Momentum of Galaxies: Comparing the predictions of the L-Galaxies SAM with observational data*
 - **Supervisor:** Prof. Peter A. Thomas
- 2009-2015* **B.Sc. in Physics**
University of Ioannina | Ioannina, Greece

TEACHING

EXPERIENCE

2021-Present

Co-lecturer in the Division of Particle Physics and Astrophysics
University of Helsinki | Helsinki, Finland

Module Title	Module Convenor
PAP318 Galaxy Formation and Evolution	Prof. Peter H. Johansson

Assistant Tutor in the Division of Particle Physics and Astrophysics
University of Helsinki | Helsinki, Finland

Module Title	Module Convenor
PAP302 Open Problems in Modern Astrophysics	Prof. Peter H. Johansson

2018-2020

Doctoral Tutor in the School of Mathematical and Physical Sciences
University of Sussex | Brighton, United Kingdom

Module Title	Module Convenor
902F3 Astrophysical Processes	Prof. Ilian T. Iliev
F3202 Maths Methods 2	Prof. A. Kathy Romer
F3229 Physics in Practice	Prof. Fabrizio Salvatore
F3302 Foundation Mathematics B	Dr. Jackie J. Grant
F3301 Foundation Mathematics A	Dr. Jackie J. Grant
F3201 Maths Methods 1	Prof. Alessandro Cerri

2016-2017

Private Physics Tutor

Thessaloniki, Greece

Voluntarily tutored high school students during their senior year of secondary education (Panhellenic National Examinations). Provided assistance to students from low-income families on a one-to-one basis. Organized and delivered lectures, designed textbooks and homework assignments.

2014

Assistant Tutor

University of Ioannina | Ioannina, Greece

Collaborated with a 3-member team and Dr. Panagiota Kanti in order to determine specific topics in Gravity and General Theory of Relativity. Prepared and delivered series of lectures to undergraduate students.

SUPERVISION

2022-present

Project Developer and Supervisor

University of Helsinki | Helsinki, Finland

- **Student:** Sonja Soininen
- **Degree:** M.Sc. in Particle Physics and Astrophysical Sciences
- **Thesis:** *Investigating the impact of astrophysical processes on the structure of galaxies*

POSITIONS OF RESPONSIBILITY

- 2022-present** **Journal Reviewer**
Astronomy & Astrophysics (A&A), The Astrophysical Journal (ApJ)
- 2022-2023** **Organiser of the Theoretical Extragalactic Group’s Journal Club**
University of Helsinki | Helsinki, Finland
- Jan 2022** **M.Sc. Thesis Evaluator**
University of Helsinki | Helsinki, Finland
- **Student:** Atte Keitaanranta
 - **Thesis:** *Supermassive black hole binaries and the formation of massive early-type galaxies in cosmological simulations* ([pdf](#))
- 2020-2021** **Agenda Organiser and Coordinator of the Weekly FLARES Meetings**
University of Sussex | Brighton, United Kingdom
- 2018-Present** **Designer and Maintainer of the Virgo Consortium’s Website**
<https://virgo.dur.ac.uk>
- Jan-May 2019** **Organiser of the Extragalactic Astronomy Journal Club**
University of Sussex | Brighton, United Kingdom
- Jan 2019** **Technical Assistant in the “Scientific Computing” Module Exam**
University of Sussex | Brighton, United Kingdom
- Jan 2018-2020** **Presentations Assessor in the “Physics in Practice” Module**
University of Sussex | Brighton, United Kingdom

GRANTS

2020	Hardship fund	£750
	MPS travel grant	£500

OUTREACH

2022-present

Member of the well-being group

The [well-being group](#) of the Department of Physics at the University of Helsinki provides supports and aids the integration of employees, by organising recreational activities and raising awareness around well-being issues.

Sept 2022

Host for a space-themed event

[Think Corner](#) and [University of Helsinki](#) organised a space-themed participatory [workshop](#) intended for children, families, and adults. We guided the visitors and introduced the cosmological simulations that were on display as a VR video.

2021-present

Author for 2' science

[2' science](#) is a group of young Astrophysics researchers who love science and enjoy writing articles about it. Its main goal is to communicate interesting Astrophysics topics to the Greek, general public via articles of varying difficulty which can be read within 2 minutes.

Greek translator for Astrobites articles

[Astrobites](#) is a community of Astronomy graduate students who write brief descriptions of scientific papers in a format accessible for undergraduates or the general public. In order to be more inclusive, a series of multi-language posts has been introduced.

2020-2021

Intersectional PhD Peer Support network (IPPSnet)

[IPPSnet](#) aims to create a friendly and supportive intersectional community and support under-represented (black and ethnic minorities, disabled, LGBTQIA+, minority religion, and women) PhD students across the SEPnet institutions.

MPS Inclusion Forum

[@MPSInclForum](#) is a group of PhD students in the Mathematical and Physical Sciences department at the University of Sussex; who meet regularly to discuss about inclusive teaching practices and to take action to promote diversity and equality.

2017

Astrophysics for the Greek, general public

Presented complex material to audiences of varying skills. Incorporated concrete examples and stories to illustrate points and maintain audience attention.

- **Titles:**

- *Cosmic chaos and harmony II: Discovering the objects projected upon the celestial sphere*
- *Cosmic chaos and harmony: Formation, Structure and Evolution of the Universe*

Dimitrios Irodotou - Publications List

FIRST-AUTHOR PUBLICATIONS

- 2022** *The effects of AGN feedback on the structural and dynamical properties of Milky Way-mass galaxies in cosmological simulations*
- **Dimitrios Irodotou**, Francesca Fragkoudi, Ruediger Pakmor, Robert J. J. Grand, Dimitri A. Gadotti, Tiago Costa, Volker Springel, Facundo A. Gómez, and Federico Marinacci
 - MNRAS: [513, 3768](#), ADS: [2110.11368](#)
- 2021** *Using angular momentum maps to detect kinematically distinct galactic components*
- **Dimitrios Irodotou** and Peter A. Thomas
 - MNRAS: [501, 2182](#), ADS: [2009.08483](#)
- 2019** *Morphological evolution and galactic sizes in the L-Galaxies SA model*
- **Dimitrios Irodotou**, Peter A. Thomas, Bruno M. Henriques, Mark T. Sargent, and Jessica M. Hislop
 - MNRAS: [489, 3609](#), ADS: [1810.05173](#)

CO-AUTHORED
PUBLICATIONS

2023

The growth of intermediate mass black holes through tidal captures and tidal disruption events

- Francesco Paolo Rizzuto, Thorsten Naab, Antti Rantala, Peter H. Johansson, Jeremiah P. Ostriker, Nicholas C. Stone, Shihong Liao, and **Dimitrios Irodotou**
- MNRAS: [521, 2930](#) ADS: [2211.13320](#)

Modelling the accretion and feedback of supermassive black hole binaries in gas-rich galaxy mergers

- Shihong Liao, Peter H. Johansson, Matias Mannerkoski, **Dimitrios Irodotou**, Francesco Paolo Rizzuto, Stuart McAlpine, Antti Rantala, Alexander Rawlings, Till Sawala
- MNRAS: [520, 4463](#) ADS: [2211.11788](#)

First Light And Reionisation Epoch Simulations (FLARES) XII: The consequences of star-dust geometry on galaxies in the EoR

- Aswin P. Vijayan, Peter A. Thomas, Christopher C. Lovell, Stephen M. Wilkins, Thomas R. Greve, **Dimitrios Irodotou**, William J. Roper, and Louise T. C. Seeyave
- MNRAS: submitted ADS: [2303.04177](#)

First Light And Reionization Epoch Simulations (FLARES) - V. The redshift frontier

- Stephen M. Wilkins, Aswin P. Vijayan, Christopher C. Lovell, William J. Roper, **Dimitrios Irodotou**, Joseph Caruana, Louise T. C. Seeyave, Jussi K. Kuusisto, Peter A. Thomas, and Shedeur A. K. Parris
- MNRAS: [519, 3118](#) ADS: [2204.09431](#)

Baryonic Effects on Lagrangian Clustering and Angular Momentum Reconstruction

- Ming-Jie Sheng, Hao-Ran Yu, Sijia Li, Shihong Liao, Min Du, Yunchong Wang, Peng Wang, Kun Xu, Shy Genel, and **Dimitrios Irodotou**
- ApJ: [943, 128](#) ADS: [2210.04203](#)

First Light And Reionisation Epoch Simulations (FLARES) XI: [OIII] emitting galaxies at $5 < z < 10$

- Stephen M. Wilkins, Christopher C. Lovell, Aswin P. Vijayan, **Dimitrios Irodotou**, Nathan J. Adams, William J. Roper, Joseph Caruana, Jorryt Matthee, Louise T. C. Seeyave, Christopher J. Conselice, Pablo G. Peérez-González, Jack C. Turner, and James M. S. Donnellan
- MNRAS: submitted ADS: [2301.13038](#)

*First Light and Reionisation Epoch Simulations (FLARES) X:
Environmental Galaxy Bias and Survey Variance at High Redshift*

- Peter A. Thomas, Christopher C. Lovell, Maxwell G. A. Maltz, Aswin P. Vijayan, Stephen M. Wilkins, **Dimitrios Irodotou**, William J. Roper, and Louise Seeyave
- MNRAS: submitted ADS: [2301.09510](#)

FLARES IX: The Physical Mechanisms Driving Compact Galaxy Formation and Evolution

- William J. Roper, Christopher C. Lovell, Aswin P. Vijayan, **Dimitrios Irodotou**, Jussi K. Kuusisto, Jasleen Matharu, Louise T. C. Seeyave, Peter A. Thomas, and Stephen M. Wilkins
- MNRAS: submitted ADS: [2301.05228](#)

*First Light And Reionization Epoch Simulations (FLARES) VII:
The star formation and metal enrichment histories of galaxies in the early Universe*

- Stephen M. Wilkins, Aswin P. Vijayan, Christopher C. Lovell, William J. Roper, Erik Zackrisson, **Dimitrios Irodotou**, Louise T. C. Seeyave, Jussi K. Kuusisto, Peter A. Thomas, Joseph Caruana, and Christopher J. Conselice
- MNRAS: [518](#), [3935](#) ADS: [2208.00976](#)

2022

*First Light and Reionisation Epoch Simulations (FLARES) - VI.
The colour evolution of galaxies $z = 5-15$*

- Stephen M. Wilkins, Aswin P. Vijayan, Christopher C. Lovell, William J. Roper, **Dimitrios Irodotou**, Joseph Caruana, Louise T. C. Seeyave, Jussi K. Kuusisto, and Peter A. Thomas
- MNRAS: [517](#), [3227](#), ADS: [2207.10920](#)

FLARES VIII. The Emergence of Passive Galaxies in the Early Universe ($z > 5$)

- Christopher C. Lovell, Will Roper, Aswin P. Vijayan, Louise Seeyave, **Dimitrios Irodotou**, Stephen M. Wilkins, Christopher J. Conselice, Flaminia Fortuni, Jussi K. Kuusisto, Emiliano Merlin, Paola Santini, and Peter Thomas
- MNRAS: submitted ADS: [2211.07540](#)

The JWST Hubble Sequence: The Rest-Frame Optical Evolution of Galaxy Structure at $1.5 < z < 8$

- Leonardo Ferreira, Christopher J. Conselice, Elizaveta Sazonova, Fabricio Ferrari, Joseph Caruana, Clár-Bríd Tohill, Geferson Lucatelli, Nathan Adams, **Dimitrios Irodotou**, Madeline A. Marshall, Will J. Roper, Christopher C. Lovell, Aprajita Verma, Duncan Austin, James Trussler, and Stephen M. Wilkins
- ApJ: submitted ADS: [2210.01110](#)

First Light And Reionization Epoch Simulations (FLARES) - IV.
The size evolution of galaxies at $z \geq 5$

- William J. Roper, Christopher C. Lovell, Aswin P. Vijayan, Madeline A. Marshall, **Dimitrios Irodotou**, Jussi K. Kuusisto, Peter A. Thomas, and Stephen M. Wilkins
- MNRAS: [514, 1921](#), ADS: [2203.12627](#)

The challenge of simulating the star cluster population of dwarf galaxies with resolved interstellar medium

- Jessica M. Hislop, Thorsten Naab, Ulrich P. Steinwandel, Natalia Lahén, **Dimitrios Irodotou**, Peter H. Johansson, and Stefanie Walch
- MNRAS: [509, 5938](#), ADS: [2109.08160](#)

2021

First Light And Reionization Epoch Simulations (FLARES) - II.
The photometric properties of high-redshift galaxies

- Aswin P. Vijayan, Christopher C. Lovell, Stephen M. Wilkins, Peter A. Thomas, David J. Barnes, **Dimitrios Irodotou**, Jussi K. Kuusisto, and William J. Roper
- MNRAS: [501, 3289](#), ADS: [2008.06057](#)

First Light And Reionization Epoch Simulations (FLARES) - I.
Environmental dependence of high-redshift galaxy evolution

- Christopher C. Lovell, Aswin P. Vijayan, Peter A. Thomas, Stephen M. Wilkins, David J. Barnes, **Dimitrios Irodotou**, and William J. Roper
- MNRAS: [500, 2127](#), ADS: [2004.07283](#)

Dimitrios Irodotou - Talks

CONTRIBUTED TALKS

- Jul 2022** *The effects of AGN feedback on the bars and bulges of Milky Way-mass galaxies in cosmological simulations*
- [Virgo Consortium meeting](#)
 - Max Planck Institute for Astrophysics | Garching, Germany
- Jun 2022** *The effects of AGN feedback on the bars and bulges of Milky Way-mass galaxies in cosmological simulations*
- [European Astronomical Society 2022](#)
 - Valencia Conference Centre | Valencia, Spain
- Jun 2022** *The effects of AGN feedback on the bars and bulges of Milky Way-mass galaxies in cosmological simulations*
- [XMM-Newton Workshop: Black Hole Accretion Under the X-ray Microscope](#)
 - European Space Astronomy Centre | Madrid, Spain
- May 2022** *The effects of AGN feedback on the bars and bulges of Milky Way-mass galaxies in cosmological simulations*
- [Finnish Astronomical Society Astronomer's Days](#)
 - Scandic | Jyväskylä, Finland
- Jan 2021** *Identifying kinematically distinct galactic components*
- [Virgo Consortium Meeting](#)
 - Virtual
- Jan 2020** *Morphology of simulated galaxies and the effect of AGN feedback*
- [Virgo Consortium meeting](#)
 - Institute for Computational Cosmology | Durham, United Kingdom
- Dec 2018** *Disk instabilities and galactic sizes in the L-Galaxies model*
- [Virgo Consortium meeting](#)
 - Lorentz Center | Leiden, The Netherlands

COLLOQUIA AND SEMINARS

- Sep 2021** *The effects of AGN feedback on the structural and dynamical properties of Milky Way-mass galaxies in cosmological simulations*
[University of Helsinki](#) | Helsinki, Finland
- Feb 2021** *Analysing the morphology of simulated galaxies and the effect of AGN feedback*
[University of Helsinki](#) | Helsinki, Finland
- Jan 2020** *The effect of AGN feedback on bars/bulges in Auriga galaxies*

Astronomy Centre, University of Sussex | Brighton, United Kingdom

Jul 2019

The origin of diversity in the central regions of galaxies

Astronomy Centre, University of Sussex | Brighton, United Kingdom

Apr 2018

Scaling relations of structural properties in the L-Galaxies model

Astronomy Centre, University of Sussex | Brighton, United Kingdom

Mar 2016

Investigating the rotation of early-type galaxies

Astronomy Centre, University of Sussex | Brighton, United Kingdom

POSTERS

Jun 2021

The effects of AGN feedback on discs/bars/bulges in Auriga galaxies

European Astronomical Society 2021 | Virtual

Jul 2018

Structural Properties of Galaxies

UCL | London, United Kingdom