Oliver Newton

Curriculum Vitæ

Center for Theoretical Physics
Polish Academy of Sciences
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Employment & voluntary work

Vocational

2022– **Postdoctoral Fellow**, *Center for Theoretical Physics, Polish Academy of Sciences*, Warsaw, Poland.

2022 **PDRA (short-term)**, *Astrophysics Research Institute, Liverpool John Moores University*, Liverpool, UK.

2019–2021 **Postdoctoral researcher**, *Institut de Physique des Deux Infinis*, Lyon, France.

2014–2015 **Graduate Trading Platform Engineer**, *Fidessa*, Woking, UK.

Volunteering

2014–2020 **Founding trustee & Treasurer**, *UniBrass Foundation (charity number:* 1159359*)*, UK.

Education

2015–2019 **PhD**, *Institute for Computational Cosmology*, Durham, UK.
Probing the nature of dark matter with small-scale cosmology
Supervisors: Prof. Adrian Jenkins and Prof. Carlos Frenk

2010–2014 **BSc MPhys**, *University of Warwick*, Coventry, UK, *1st Class (Hons)*.
Masters project: *Determining the fundamental properties of Higgs candidates at the LHC*

Awards and scholarships

2019 **ICC Research Scholarship**, Institute for Computational Cosmology, Durham, UK.

2015–2019 **STFC Postgraduate Studentship**, Institute for Computational Cosmology, Durham, UK.

Conference contributions

Contributed talks

Sep 2022 **2nd Roman Juszkiewicz Symposium**, Nicolaus Copernicus Astronomical Center, Warsaw, Poland.
The undiscovered ultra-diffuse galaxies of the Local Group

July 2022 **VIRGO Consortium meeting**, MPA Garching, Munich, Germany.
Globular clusters as tracers of galaxy mergers

July 2022 **CLUES Collaboration meeting (online)**, Madrid, Spain.
The undiscovered ultra-diffuse galaxies of the Local Group

Oct 2021 **Świeradów-Zdrój cosmology workshop**, Świeradów-Zdrój, Poland.
Hermeian haloes: Field haloes that interacted with the Milky Way and M31

July 2021 **CLUES Collaboration meeting (online)**, AIP Potsdam, Germany.
Hermeian dark matter haloes of the Local Group

July 2020 **EAS (online)**, Leiden, Netherlands.
Constraining the properties of WDM using the satellite galaxies of the Milky Way

Jan 2020 **VIRGO Consortium meeting**, Durham, UK.
Constraining the properties of WDM using the satellite galaxies of the Milky Way

Sep 2019 **CLUES Collaboration meeting**, IN2P3, Lyon, France.
Constraints on thermal relic WDM from satellites of the Local Group

July 2019 **Small Galaxies, Cosmic Questions**, Durham, UK.
Constraints on the mass of the thermal relic warm dark matter particle

Jan 2019 **DEX XV**, Edinburgh, UK.
Constraints on the mass of the thermal relic warm dark matter particle

Dec 2018 **VIRGO Consortium meeting**, Leiden, Netherlands.
Constraints on the mass of the thermal relic warm dark matter particle

Aug 2018 **XXX IAU General Assembly**, Vienna, Austria.
Constraining the mass of the WDM particle using estimates of the total satellite population of the Milky Way

Jan 2018 **DEX XIV**, Durham, UK.
The total satellite population of the Milky Way

Dec 2017 **VIRGO Consortium meeting**, MPA Garching, Munich, Germany.
The total satellite population of the Milky Way

July 2017 **National Astronomy Meeting**, Hull, UK.
The total satellite population of the Milky Way

Dec 2016 **VIRGO Consortium meeting**, Durham, UK.
MW satellite galaxies: how many could there be?

Posters

July 2022 **EAS Meeting**, Valencia, Spain.
The undiscovered ultra-diffuse galaxies of the Local Group

June 2019 **EWASS**, Lyon, France.
Constraints on the mass of the thermal relic warm dark matter particle

Aug 2018 **XXX IAU General Assembly**, Vienna, Austria.
Constraining the mass of the WDM particle using estimates of the total satellite population of the Milky Way

Invited talks and seminars

Nov 2022 **Observatory seminar**, Astronomical Observatory, University of Warsaw, Poland.
Exploring the Local Group using constrained simulations

Oct 2022 **Astrophysics group seminar**, Lancaster University, UK.
Exploring the Local Group using constrained simulations

Nov 2021 **Astronomy seminar**, DTU Space, Copenhagen, Denmark.
Hermeian haloes: Field haloes that interacted with the Milky Way and M31

June 2021 **Small-scale structure seminar (online)**, Durham, UK.
Hermeian dark matter haloes of the Local Group

May 2021 **Stars, galaxies and cosmology café club (online)**, LAM Marseilles, France.
Hermeian dark matter haloes of the Local Group

Nov 2020 **Local Group (online)**, Durham, UK.
Constraining the properties of WDM using the satellite galaxies of the Milky Way

Supervising experience

Sep 2022– Co-supervising PhD student, Feven M. Hunde
Center for Theoretical Physics, Polish Academy of Sciences

2017–2019 Co-supervising two 4th year undergraduate student Master's theses
Durham University

Teaching experience

Sep 2022 Delivered a workshop entitled 'Working with simulation outputs in PYTHON' to postgraduate students
Center for Theoretical Physics, Polish Academy of Sciences

Professional service

Peer review

2022– The Astrophysical Journal (ApJ)

2021– Journal of Cosmology and Astroparticle Physics (JCAP)

Institution

Nov 2022– **CCG Group meeting**, *Convener*, CFT-PAN, Poland.

2021 **CLUES discussion meeting**, *Convener*, IP2I Lyon, France.

2016–2017 **Postgraduate Journal Club**, *Co-convener*, Durham, UK.

Conferences and meetings

2018–2019 **Small Galaxies, Cosmic Questions LOC**, *Member*, Durham, UK.

Memberships

Jun 2022– Junior Member of the International Astronomical Union

Oct 2019– Member CLUES Collaboration

May 2017– Fellow of the Royal Astronomical Society, UK

Oct 2015– Member Virgo Consortium

Outreach

Events

Oct 2018 **Celebrate Science**, Durham, UK.
Galaxy Makers

Apr 2018 **Schools Science Festival**, Durham, UK.
Galaxy Makers

Oct 2017 **Celebrate Science**, Durham, UK.
Galaxy Makers

Apr 2017 **Schools Science Festival**, Durham, UK.
Galaxy Makers

Jul 2016 **Royal Society Summer Science Exhibition**, London, UK.
Galaxy Makers

Activity development

2015–2016 **Galaxy Makers**, Durham, UK.
Developed design ideas and ran the constituent EAGLE volumes that were visualised in the final exhibit.

Computing

Languages Python, HPC, LaTeX, TCL, SQL, Microsoft Office suite

Simulations AHF, SubFind, Gadget, AREPO

Publications

2022 Anastasiia Osipova, Sergey Pilipenko, Stefan Gottlöber, et al., Hermeian haloes in cosmological volumes, *ArXiv e-prints*, September 2022, doi: 10.48550/arXiv.2209.07234

Oliver Newton, Noam I Libeskind, Alexander Knebe, et al., Hermeian haloes: Field haloes that interacted with both the Milky Way and M31, *MNRAS*, 514(3):3612–3625, August 2022, doi: 10.1093/mnras/stac1316

Oliver Newton, Hermeian paper plotting code, Zenodo, June 2022, doi: 10.5281/zenodo.6629724

2021 Mark R Lovell, Marius Cautun, Carlos S Frenk, et al., The spatial distribution of Milky Way satellites, gaps in streams, and the nature of dark matter, *MNRAS*, 507(4):4826–4839, November 2021, doi: 10.1093/mnras/stab2452

Wolfgang Enzi, Riccardo Murgia, **Oliver Newton**, et al., Joint constraints on thermal relic dark matter from strong gravitational lensing, the Ly α forest, and Milky Way satellites, *MNRAS*, 506(4):5848–5862, October 2021, doi: 10.1093/mnras/stab1960

Oliver Newton, Matteo Leo, Marius Cautun, et al., Constraints on the properties of warm dark matter using the satellite galaxies of the Milky Way, *JCAP*, 2021(08):062, August 2021, doi: 10.1088/1475-7516/2021/08/062

2018 **Oliver Newton**, Marius Cautun, Adrian Jenkins, et al., The total satellite population of the Milky Way, *MNRAS*, 479(3):2853–2870, September 2018, doi: 10.1093/mnras/sty1085

Oliver Newton, Marius Cautun, Adrian Jenkins, et al., The Milky Way's total satellite population and constraining the mass of the warm dark matter particle, *Proc. IAU*, 14(S344):109–113, August 2018, doi: 10.1017/S1743921318006464

Oliver Newton and Marius Cautun, MW Satellite LF: V1.0.0 release, Zenodo, March 2018, doi: 10.5281/zenodo.1205622