

# Sophie Koudmani

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<b>RESEARCH INTERESTS</b>	Computational astrophysics; galaxy formation and evolution, dwarf galaxies; astrophysical black holes, accretion discs	
<b>EMPLOYMENT &amp; EDUCATION</b>	<b>Flatiron Research Fellow</b> Center for Computational Astrophysics (CCA), Flatiron Institute, US Independent Research Fellowship Member of Galaxy Formation Group	2022-
	<b>Junior Research Fellow</b> St Catharine's College, University of Cambridge, UK Independent Research Fellowship Host Department: Institute of Astronomy (IoA)	2021-
	<b>PhD in Astronomy</b> IoA, University of Cambridge, UK Thesis: 'Black Hole Feedback in New Regimes: Modelling Dwarf Galaxies with Active Galactic Nuclei' Supervisors: Prof. Debora Sijacki and Prof. Martin Haehnelt	2017-21
	<b>Summer Research Student</b> Imperial Centre for Inference and Cosmology (ICIC), Imperial College London, UK Project Title: 'Inferring Ionization Maps from 21cm Maps of the Epoch of Reionization' Supervisor: Dr. Jonathan Pritchard	Aug-Sep 2016
	<b>MPhys Physics (1st Class)</b> New College, University of Oxford, UK MPhys Project: 'The HI Mass Function in the Horizon-AGN Simulation' (1st Class) Supervisors: Prof. Adrienne Slyz and Prof. Julien Devriendt	2013-17
<b>HONOURS &amp; AWARDS</b>	Flatiron Research Fellowship (deferred to 2022), CCA, Flatiron Institute Junior Research Fellowship, St Catharine's College, Cambridge Paul Murdin Prize (best paper by an IoA PhD student), IoA, Cambridge Fully-funded PhD Studentship (3.5 years + 1 month extension due to pandemic), STFC Commendation for Laboratory Practical Work, Oxford Physics Department Scholarship Prize, New College, Oxford Mathematics Abitur Prize, German Mathematical Society (DMV) Physics Abitur Prize, German Physical Society (DPG)	2021 2021 2019 2017-21 2016 2015-17 2013 2013
<b>AWARDED GRANTS</b>	DiRAC Computing Grant (2.99 MCPUh, PI), STFC DiRAC Computing Grant (35.72 MCPUh, Co-I, PI: Sijacki), STFC Conference Travel Support (\$900), North American ALMA Science Center Conference Travel Grant (£350), Churchill College, Cambridge Conference Travel Grant (£350), Churchill College, Cambridge DiRAC Computing Grant (28.47 MCPUh, Co-I, PI: Sijacki), STFC Undergraduate Research Bursary (£1200), Royal Astronomical Society Study Grant (£150), New College, Oxford	2021 2020 2020 2020 2019 2018 2016 2016

**CONFERENCES  
& SEMINARS****Invited Conference Talks:**

‘The role of feedback in galaxy quenching: a theoretical perspective’ [review talk] <i>The Epoch of Galaxy Quenching</i> , Cambridge, UK	Sep 2022
‘The impact of AGN-driven outflows on dwarf galaxies’ <i>EAS Meeting S6: Properties and impact of large-scale multiphase AGN outflows</i> , Valencia, Spain	Jun 2022
‘The role of AGN feedback in dwarf galaxies’ <i>Ringberg 2022: Breakthroughs in Galaxy Formation</i> , Ringberg Castle, Germany	Apr 2022

**Contributed Conference Talks:**

‘The impact of AGN-driven outflows on dwarf galaxies’ <i>Origin, growth and feedback of black holes in dwarf galaxies</i> , San Sebastián, Spain	Sep 2022
‘Black hole feedback in new regimes’ <i>IAUS362: The Predictive Power of Computational Astrophysics as a Discovery Tool</i> [virtual]	Nov 2021
‘The role of AGN feedback in high-redshift dwarf galaxies’ <i>SAZERAC SIP: Models and Simulations of High-Redshift Galaxies</i> [virtual]	Oct 2021
‘The impact of AGN feedback on simulated dwarf galaxies’ <i>Young Astronomers on Galactic Nuclei (YAGN)</i> [hybrid], Copenhagen, Denmark	Sep 2021
‘The impact of AGN feedback on simulated dwarf galaxies’ <i>237<sup>th</sup> Meeting of the AAS</i> [virtual]	Jan 2021
‘The impact of AGN feedback on simulated dwarf galaxies’ <i>Origin, Growth and Feedback of Black Holes in Dwarf Galaxies</i> [virtual pre-meeting]	Sep 2020
‘The role of AGN feedback in the quenching of dwarf galaxies’ <i>Galaxy Quenching and Transformation Throughout Cosmic Time</i> , Aspen, US	Feb 2020
‘The impact of AGN-driven outflows on simulated dwarf galaxies’ <i>Small Galaxies, Cosmic Questions</i> , Durham, UK	Jul 2019

**Departmental Seminars:**

Galread Seminar [invited], Princeton University, US	Oct 2022
CCA Lunch Seminar [invited], Flatiron Institute, New York, US	Oct 2022
Galaxies Discussion Group Seminar [invited], IoA, Cambridge, UK	Jul 2022
Kavli Focus Meeting [invited], KICC, Cambridge, UK	May 2022
Fellows’ and Graduates’ Seminar [invited], St Catharine’s College, Cambridge, UK	Mar 2022
IoA Seminar [invited], IoA, Cambridge, UK	Nov 2021
Galaxy Group Meeting [invited, remote], Flatiron Institute, New York, US	Jun 2021
Cosmology/Extragalactic Seminar [invited, remote], UCL, London, UK	May 2021
Lunch Talk [remote], Carnegie Observatories, Pasadena, US	Mar 2021
CIERA GalForm Group Meeting [invited, remote], Northwestern University, US	Dec 2020
Galaxies Discussion Group Seminar [invited, remote], IoA, Cambridge, UK	Nov 2020
Theoretical Astrophysics Seminar [invited, remote], ICS, Zurich, Switzerland	Oct 2020
CfA GCSP Seminar [remote], CfA Harvard, Cambridge, US	Oct 2020
Caltech Astronomy Tea Talk [remote], Caltech, Pasadena, US	Oct 2020
E. A. Milne Centre Group Meeting [invited, remote], University of Hull, UK	Aug 2020
MPIA Galaxy Coffee Seminar [invited, remote], MPIA, Heidelberg, Germany	Jun 2020
Numerical Simulations Group Meeting, University of Oxford, UK	Oct 2019
Kavli Happy Hour Talk [invited], KICC, Cambridge, UK	May 2019
CCA Lunch Seminar, Flatiron Institute, New York, US	May 2019
Numerical Simulations Group Meeting, CfA Harvard, Cambridge, US	Apr 2019
IoA Seminar, IoA, Cambridge, UK	Mar 2019
SimObs Meeting, University of Oxford, UK	Mar 2017

**COMPUTING  
SKILLS**

*Programming Languages:* Python, C, BASH scripting  
*Tools/Packages:* numpy, scipy, matplotlib, Git, MPI

**LANGUAGE  
SKILLS**

*English:* fluent; *German:* native speaker; *French:* basic

<b>TEACHING &amp; OUTREACH</b>	<b>Project Supervisions</b> , University of Cambridge: Master's Project Co-Supervisor, Guy Uong: 'Dynamical Friction on Supermassive Black Holes in Galaxy Formation Simulations'	2021-22	
	<b>Substitute Lecturer</b> , University of Cambridge: Astrophysical Black Holes, 4th year (Part III) Astrophysics	2022	
	<b>Teaching Supervisions</b> (undergraduate tutorials), University of Cambridge: Astrophysical Fluid Dynamics, 3rd year (Part II) Astrophysics Mathematics, 1st year (Part IA) Natural Sciences	2019 2017-18	
	<b>Drop-in Sessions</b> , University of Cambridge: Astrophysical Black Holes, 4th year (Part III) Astrophysics	2019, 2021	
	<b>Examinations</b> , University of Cambridge: Assessor for 'IoA Third Year PhD Thesis Review' Standards Assessor for Astrophysical Black Holes, 4th year (Part III) Astrophysics Marks Checker for Astrophysical Black Holes, 4th year (Part III) Astrophysics	2022 2022 2019, 2021, 2022	
	<b>Outreach Activities:</b> 4 Outreach Talks at IoA and Churchill College Volunteer at Cambridge Science Festival, IoA Course Instructor at 'Greenlight for Girls' STEM Initiative Volunteer at Oxford Stargazing Events, Oxford Physics Department	2018-22 2018-19 2017 2014-16	
	<b>SERVICE</b>	Reviewer for <i>The Astrophysical Journal</i> (ApJ)	2022-
		Reviewer for <i>Monthly Notices of the Royal Astronomical Society</i> (MNRAS)	2022-
		Session Chair EAS 2022 'Properties and impact of large-scale multiphase AGN outflows'	2022
		Co-Organizer NAM Session 'Linking simulations to observations to understand galaxy evolution'	2022
		Co-Organizer Kavli Focus Meeting 'Feedback in and around Galaxies'	2021
		IoA Self Assessment Team: Juno/Athena SWAN Gender Equality Awards	2020-22
		Black Hole Physics Student Discussion Group (Initiator & Organizer)	2019-21
		IoA Equality, Diversity & Inclusion Committee	2018-22
IoA Computer Users Committee		2018-22	
Cambridge Astro Women's Network		2018-22	
Organizing Committee: Conference for Undergraduate Women in Physics UK		2016-17	
Oxford Women in Physics Society: Undergraduate Representative		2015-17	
Oxford University Counselling Service: Peer Supporter for New College		2014-17	
New College JCR Committee: International Student Representative	2014-15		
New College Subject Representative for Physics	2014-15		
<b>PROFESSIONAL MEMBERSHIPS</b>	American Astronomical Society	2020-	
	Royal Astronomical Society	2019-	
	Institute of Physics	2019-	
	Cambridge Philosophical Society	2019-	
	German Physical Society (DPG)	2013-	
<b>REFEREES</b>	<b>Prof. Debora Sijacki</b> , University of Cambridge deboras@ast.cam.ac.uk		
	<b>Prof. Martin Haehnelt</b> , University of Cambridge haehnelt@ast.cam.ac.uk		
	<b>Prof. Adrienne Slyz</b> , University of Oxford adrienne.slyz@physics.ox.ac.uk		

- PUBLICATIONS**
4. **Koudmani, S.**, Sijacki, D. and Smith, M. C. '*Two can play at that game: constraining the role of supernova and AGN feedback in dwarf galaxies with cosmological zoom-in simulations*'. MNRAS (2022, 516 (2): 2112-2141).
  3. Kristensen, M. T., Pimbblet, K. A., Gibson, B. K., Penny, S. J. and **Koudmani, S.** '*Merger Histories and Environments of Dwarf AGN in IllustrisTNG*'. ApJ (2021, 922 (2): 127, 19 pp.).
  2. **Koudmani, S.**, Henden, N. A. and Sijacki, D. '*A little FABLE: exploring AGN feedback in dwarf galaxies with cosmological simulations*'. MNRAS (2021, 503 (3): 3568-3591).
  1. **Koudmani, S.**, Sijacki, D., Bourne, M. A. and Smith, M. C. '*Fast and energetic AGN-driven outflows in simulated dwarf galaxies*'. MNRAS (2019, 484 (2): 2047-2066).