

BRADLEY J KAVANAGH

CONTACT DETAILS	GRAPPA Institute University of Amsterdam Science Park 904 1098 XH Amsterdam The Netherlands	TEL +31 (0) 616 463 857 EMAIL b.j.kavanagh@uva.nl WEB bradkav.net ORCID ID 0000-0002-3634-4679
DATE OF BIRTH	15th March 1989	NATIONALITY British
ACADEMIC HISTORY	<p>September 2017 - present: GRAPPA, University of Amsterdam GRAPPA Post-doctoral Position Supervisors: Dr. Gianfranco Bertone & Dr. Christoph Weniger</p> <p>October 2014 - August 2017: LPTHE, Paris & IPhT, CEA/Saclay NewDark ERC Post-doctoral Fellowship Supervisor: Dr. Marco Cirelli</p> <p>September 2011 - September 2014: University of Nottingham, UK PhD, Particle Theory Group PhD Thesis: “Confronting Astrophysical Uncertainties in the Direct Detection of Dark Matter” Supervisor: Dr. Anne M. Green</p> <p>September 2010 - June 2011: University of Cambridge, UK Master of Science (MSci): Theoretical Physics Master’s thesis: “Wavepacket scattering simulations using GPGPU” Modules in quantum field theory, particle astrophysics and cosmology.</p> <p>September 2007 - June 2010: University of Cambridge, UK Bachelor of Arts (BA): Natural Sciences (Physical) First class honours degree (ranked 13 out of 578).</p>	
RESEARCH INTERESTS	My main research interest is in the phenomenology of <i>particle dark matter</i> (DM). My primary focus has been on the direct detection of particle DM in underground laboratory experiments. I have previously demonstrated how the astrophysics and particle physics properties of a new DM particle could be robustly determined in the event of a discovery. Ongoing research includes the study of novel signatures and new approaches in the direct search for DM. With the advent of gravitational wave (GW) astronomy, I have begun focusing on the effects of DM on GW signals from compact object mergers. In particular, I am interested in whether dense DM halos around black holes can be detected through their influence on observed merger rates and gravitational waveforms.	
PUBLICATIONS (LIST ONLINE)	30 publications (23 peer-reviewed). These include 5 single-author papers, 13 first-author papers and 2 papers published in <i>Physical Review Letters</i> .	
SELECTED TALKS (SLIDES ONLINE)	<p>Invited Talk, SLAP 2018, King’s College London, 18 December 2018 Title: “Black Holes’ Dark Dress: Merging Black Holes and the Dark Matter around them”</p> <p>PRISMA Colloquium, University of Mainz, 17 October 2018 Title: “Can we directly measure the local distribution of Dark Matter from Earth?”</p> <p>Invited Overview Talk, Dark Side of the Universe 2018, Annecy, 25 June 2018 Title: “Signal Diversity and EFT in Dark Matter Direct Detection”</p>	

	<p>[Video] Invited Overview Talk, DM-Stat Workshop, Banff, 26 February 2018 Title: “An Introduction to Dark Matter”</p> <p>[Video] LAW Physics Webinar, 17 January 2018 Title: “Can we determine the particle/antiparticle nature of Dark Matter?”</p>
TEACHING	<p>Astroparticle Physics Course for bachelor’s students (14 weeks; lectures, TA sessions & grading; Amsterdam University College, 2019).</p> <p>Theory Workshop for third-year bachelor’s students (4 weeks; lectures & examples classes in astroparticle physics; Institute for Theoretical Physics Amsterdam, 2018 & 2019).</p> <p>GRAPPA Student Seminar series for first-year MSc students (4 weeks; lectures & project supervision in astroparticle physics; University of Amsterdam, 2018).</p> <p>Supervision of Erasmus Student Project (Elena Pinetti, University of Turin, 2016).</p>
AWARDS & PRIZES	<p>Institute of Physics (IOP) Astroparticle Physics Thesis prize, 2016</p> <p>2nd Place, Physics Postgraduate Poster Competition, University of Nottingham, UK, 6 February 2013</p> <p>Foundation Scholarship (for achieving a First class mark in all papers), University of Cambridge, UK, 2009, 2010, 2011</p> <p>David Thompson Scholarship (for achieving a First class mark), University of Cambridge, UK, 2008</p>
COMPUTER SKILLS (CODE ONLINE)	<p><i>Languages & Software:</i> C/C++, CUDA (GPGPU programming), Fortran, Python, MATLAB, Mathematica, Git, high-performance computing, N-body simulation.</p> <p><i>Operating Systems:</i> Windows, Linux, Mac OS X.</p>
CONFERENCE ORGANISATION	<p>PHYSTAT Dark Matter, Scientific Advisory Committee (Stockholm, 2019).</p> <p>7th Amsterdam-Paris-Stockholm meeting (2017).</p> <p>NewDark mini-workshops: ‘LCDM, Modified Gravity or new Dark Matter models?’ (2017), ‘Dark Matter and Stars’ (2016) and ‘Axion Theory and Searches’ (2015) in Paris, France.</p> <p>Young Experimentalists and Theorists Institute (YETI) 2014, Durham, UK.</p>
OTHER RELEVANT EXPERIENCE	<p>Referee for PRL, PRD, JCAP, EPJC and Physics of the Dark Universe.</p> <p>Coordinating and editing publication of outreach article on the NewDark research group: ‘Dark is the new black’ (Scientia, 2016).</p> <p>Outreach talks at undergraduate physics open days at University of Nottingham (2012, 2013) and at University of Cambridge Part III research day (2012).</p> <p>Journal Club organiser and chair at University of Nottingham and at GRAPPA, University of Amsterdam.</p>