

CONTACT DETAILS	<p><a href="#">Instituto de Física de Cantabria (IFCA)</a>  Avenida de los Castros, s/n  E-39005 Santander  Cantabria, Spain</p>	<p>TEL +31 (0) 616 463 857  EMAIL <a href="mailto:bradkav@gmail.com">bradkav@gmail.com</a>  WEB <a href="http://bradkav.net">bradkav.net</a>  ORCID ID <a href="https://orcid.org/0000-0002-3634-4679">0000-0002-3634-4679</a></p>
DATE OF BIRTH	15th March 1989	NATIONALITY British
ACADEMIC HISTORY	<p><b>March 2020 - Present: IFCA, University of Cantabria, Santander</b>  María de Maeztu Unit of Excellence Post-doctoral Position  Supervisors: Dr. Rocío Vilar &amp; Dr. José M. Diego</p> <p><b>September 2017 - February 2020: GRAPPA, University of Amsterdam</b>  GRAPPA Post-doctoral Position  Supervisors: Dr. Gianfranco Bertone &amp; Dr. Christoph Weniger</p> <p><b>October 2014 - August 2017: LPTHE, Paris &amp; IPhT, CEA/Saclay</b>  NewDark ERC Post-doctoral Fellowship  Supervisor: Dr. Marco Cirelli</p> <p><b>September 2011 - September 2014: University of Nottingham, UK</b>  PhD, Particle Theory Group  PhD Thesis: “<a href="#">Confronting Astrophysical Uncertainties in the Direct Detection of Dark Matter</a>”  Supervisor: Dr. Anne M. Green</p> <p><b>September 2010 - June 2011: University of Cambridge, UK</b>  Master of Science (MSci): Theoretical Physics  Master’s thesis: “Wavepacket scattering simulations using GPGPU”</p> <p><b>September 2007 - June 2010: University of Cambridge, UK</b>  Bachelor of Arts (BA): Natural Sciences (Physical)  First class honours degree (ranked 13 out of 578).</p>	
RESEARCH INTERESTS	<p>My main interest is in the phenomenology of <b>particle dark matter</b> (DM). My primary focus has been on the <b>direct detection</b> of 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, and I continue to study novel signatures in the direct search for DM. With the advent of <b>gravitational wave (GW) astronomy</b>, I have begun focusing on the effects of DM on GWs from compact object mergers. In particular, I am interested in whether dense DM halos around <b>black holes (both primordial and astrophysical)</b> can be detected through their influence on merger rates and gravitational waveforms.</p>	
PUBLICATIONS ( <a href="#">LIST ONLINE</a> )	<p>46 publications (38 peer-reviewed). These include 5 single-author papers, 16 first-author papers and 4 papers published in <i>Physical Review Letters</i>.</p>	
SELECTED TALKS ( <a href="#">SLIDES ONLINE</a> )	<p>Invited Overview Talk, <a href="#">IRN Terascale Meeting</a> (Online), 5 November 2020  Title: “<a href="#">Constantly changing constraints on Primordial Black Hole Dark Matter</a>”</p> <p><a href="#">IFCA Colloquium</a>, Santander, Spain, 7 October 2019  Title: “<a href="#">Dark Matter, Black Holes, Gravitational Waves and Werewolves</a>”</p> <p>Invited Overview Talk, <a href="#">Dark Side of the Universe 2018</a>, Annecy, 25 June 2018  Title: “<a href="#">Signal Diversity and EFT in Dark Matter Direct Detection</a>”</p> <p><a href="#">[Video]</a> Invited Overview Talk, <a href="#">DM-Stat Workshop</a>, Banff, 26 February 2018  Title: “<a href="#">An Introduction to Dark Matter</a>”</p>	

TEACHING & SUPERVISION	<p>Astroparticle Physics Course for bachelor's students (14 weeks; course design, lectures, TA sessions &amp; grading; Amsterdam University College, 2019).</p> <p>Theory Workshop for third-year bachelor's students (4 weeks; lectures, examples classes &amp; project supervision in astroparticle physics; Institute for Theoretical Physics Amsterdam, 2018 &amp; 2019).</p> <p>GRAPPA Student Seminar series for first-year MSc students (4 weeks; lectures &amp; project supervision in astroparticle physics; University of Amsterdam, 2018).</p> <p>Individual student supervision:</p> <ul style="list-style-type: none"> <li>• Konstantinos Antoniadis (Masters), University of Amsterdam, 2019-2020</li> <li>• Juan Cortabitarte Gutierrez (Masters), University of Cantabria, 2020-2021</li> <li>• Pratibha Jangra (PhD), University of Cantabria, 2020-2024</li> </ul>
AWARDS & PRIZES	<p><a href="#">Institute of Physics (IOP) Astroparticle Physics Thesis prize</a>, 2016.</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 ( <a href="#">CODE ONLINE</a> )	<p><i>Languages &amp; 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><a href="#">Gravitational Wave Probes of Fundamental Physics (GW4FP)</a>, Local Organiser (Amsterdam, 2019).</p> <p><a href="#">PHYSTAT Dark Matter</a>, Scientific Advisory Committee (Stockholm, 2019).</p> <p><a href="#">7th Amsterdam-Paris-Stockholm meeting</a> (2017).</p> <p>NewDark mini-workshops: '<a href="#">LCDM, Modified Gravity or new Dark Matter models?</a>' (2017), '<a href="#">Dark Matter and Stars</a>' (2016) and '<a href="#">Axion Theory and Searches</a>' (2015) in Paris, France.</p>
OTHER RELEVANT EXPERIENCE	<p>Founder and current organiser of the 'Dark Collaboration' working group at IFCA, Santander, aiming to develop new project ideas and collaborations between the local Cosmology and High Energy Physics groups.</p> <p>Member of the Square Kilometer Array (SKA) 'Gravitational Waves' working group; Athena X-ray observatory 'Physics Beyond the Standard Model' working group; Laser Interferometer Space Antenna (LISA) Consortium; and Lunar Gravitational Wave Antenna (LGWA) working group.</p> <p>Referee for PRL, PRD, PRR, JCAP, EPJC, Physics of the Dark Universe, Open Journal of Astrophysics &amp; Journal of Open Source Software.</p> <p>Coordinating and editing publication of outreach article on the NewDark research group: '<a href="#">Dark is the new black</a>' (Scientia, 2016).</p> <p>Journal Club organiser and chair at University of Nottingham (2013) and at GRAPPA, University of Amsterdam (2018-2020).</p>

## REFEREES

**Prof. Anne M. Green**

Centre for Astronomy & Particle Physics  
University of Nottingham  
University Park  
Nottingham  
NG7 2RD, UK  
Email: [anne.green@nottingham.ac.uk](mailto:anne.green@nottingham.ac.uk)  
Tel: +44 115 846 7902

**Prof. Gianfranco Bertone**

Institute for Theoretical Physics  
University of Amsterdam  
Science Park 904  
Postbus 94485  
1090 GL Amsterdam, NL  
Email: [g.bertone@uva.nl](mailto:g.bertone@uva.nl)  
Tel: +31 20 525 7658

**Dr. Julien Billard**

Institut de Physique des 2 Infinis de Lyon  
Université Claude Bernard Lyon 1  
Bâtiment Paul Dirac  
4 rue Enrico Fermi  
69622 VILLEURBANNE Cedex, FR  
Email: [j.billard@ipnl.in2p3.fr](mailto:j.billard@ipnl.in2p3.fr)  
Tel: +33 4 72 43 14 27