

ALL. B

Curriculum Vitae ai fini della pubblicazione

Pasadena

12 March 2025

Part I – General Information

Full Name	
Date of Birth	
Place of Birth	
Citizenship	
Permanent Address	
Mobile Phone Number	
E-mail	
Spoken Languages	English (native), French (intermediate), Italian (intermediate)

Part II – Education

Type	Year	Institution	Notes (Degree, Experience,...)
University graduation	2005	University of Toronto	BSc in Mathematics and Physics
Post-graduate studies	2006	University of Chicago	MS in Physical Sciences
PhD	2012	University of Chicago	PhD in Physics
Specialty			
Pre-doctorate training			
Licensure 01			
Licensure 02			

Part III – Appointments

IIIA – Academic Appointments

Start	End	Institution	Position
2012	2014	University of Guelph, Canada	CITA National Postdoctoral Fellow
2014	2017	Perimeter Institute for Theoretical Physics, Canada	Postdoctoral Researcher
2017	2022	Max Planck Institute for Gravitational Physics, Potsdam, Germany	Postdoc (2017-2021) Senior Scientist (2021-2022)
2022	Present	University of Nottingham	Senior Research Fellow

IIIB – Other Appointments

Start	End	Institution	Position

Part IV – Teaching experience

Year	Institution	Lecture/Course

Part V - Society memberships, Awards and Honors

Year	Title
2017	Marie Skłodowska-Curie Actions Seal of Excellence
2012	Nathan Sugarman Award (Enrico Fermi Institute) for excellence in graduate research

Part VI - Funding Information [grants as PI-principal investigator or I-investigator]

Year	Title	Program	Grant value
2024-2028	AI-Driven Inference for Gravitational Waves: Accelerating Discoveries in Fundamental Physics	UKRI Future Leaders Fellowship	£1.522m
2022-2025	Black holes, gravitational waves, and machine learning probes	University of Nottingham, Nottingham Research Fellowship	£221k

Part VII – Research Activities

Keywords	Brief Description
Gravitational waves	My main research is in developing advanced AI methods for fast-and-accurate gravitational wave data analysis. I am lead developer of the simulation-based inference pipeline, DINGO, which has gone through review a LIGO review for use in official analyses. I also work on black hole perturbation theory, with applications to the ringdown stage following a binary merger.
Artificial intelligence	
Black holes	
Perturbation theory	

Part VIII – Summary of Scientific Achievements

Product type	Number	Data Base	Start	End
Papers [international]	39	Scopus	21/07/2011	12/03/2025
Papers [national]				
Books [scientific]				
Books [teaching]				

Total Impact factor	244
Total Citations	1703
Average Citations per Product	43.6
Hirsch (H) index	23
Normalized H index*	1.6

*H index divided by the academic seniority.

Part IX– Selected Publications

List of the publications selected for the evaluation. For each publication report title, authors, reference data, journal IF (if applicable), citations, press/media release (if any).

1. E. Cannizzaro, L. Sberna, S. R. Green, and S. Hollands, “Relativistic Perturbation Theory for Black-Hole Boson Clouds”, Phys. Rev. Lett. 132, 051401 (2024). [citations: 10]
2. M. Dax, S. R. Green, J. Gair, M. Puërrer, J. Wildberger, J. H. Macke, A. Buonanno, and B. Schoëlkopf, “Neural Importance Sampling for Rapid and Reliable Gravitational-Wave Inference”, Phys. Rev. Lett. 130, 171403 (2023). [citations: 44]
3. M. Dax, S. R. Green, J. Gair, N. Gupte, M. Puërrer, V. Raymond, J. Wildberger, J. H. Macke, A. Buonanno, and B. Schoëlkopf, “Real-time inference for binary neutron star mergers using machine learning”, Nature 639, 49–53 (2025). [citations: NA]
4. M. Dax, S. R. Green, J. Gair, J. H. Macke, A. Buonanno, and B. Schölkopf, “Real-Time Gravitational Wave Science with Neural Posterior Estimation”, Phys. Rev. Lett. 127, 241103 (2021). [citations: 116]
5. S. R. Green, C. Simpson, and J. Gair, “Gravitational-wave parameter estimation with autoregressive neural network flows”, Phys. Rev. D 102, 104057 (2020). [citations: 96]
6. K. Leyde, S. R. Green, A. Toubiana, and J. Gair, “Gravitational wave populations and cosmology with neural posterior estimation”, Phys. Rev. D 109, 064056 (2024). [citations: 3]
7. S. R. Green, S. Hollands, L. Sberna, V. Toomani, and P. Zimmerman, “Conserved currents for a Kerr black hole and orthogonality of quasinormal modes”, Phys. Rev. D 107, 064030 (2023). [citations: 40]
8. S. R. Green and J. Gair, “Complete parameter inference for GW150914 using deep learning”, Mach. Learn. Sci. Tech. 2, 03LT01 (2021). [citations: 61]

9. L. Sberna, P. Bosch, W. E. East, S. R. Green, and L. Lehner, “Nonlinear effects in the black hole ringdown: Absorption-induced mode excitation”, *Phys. Rev. D* 105, 064046 (2022). [citations: 51]
10. S. R. Green, S. Hollands, and P. Zimmerman, “Teukolsky formalism for nonlinear Kerr perturbations”, *Class. Quant. Grav.* 37, 075001 (2020). [citations: 39]
11. V. Toomani, P. Zimmerman, A. Spiers, S. Hollands, A. Pound, and S. R. Green, “New metric reconstruction scheme for gravitational self-force calculations”, (2022). *Classical and Quantum Gravity*, 2022, 39(1), 015019. [citations: 26]
12. P. Bosch, S. R. Green, L. Lehner, and H. Roussille, “Excited hairy black holes: Dynamical construction and level transitions”, *Phys. Rev. D* 102, 044014 (2020). [citations: 9]

Speaker at international conferences (18 in past 5 years, of which 10 invited, denoted by *):

1. *Challenges and future perspectives in gravitational-wave astronomy: O4 and beyond, Lorentz Center, Leiden, The Netherlands (2024).
2. *Panelist on “Data analysis challenges in the signal dominated era” at PAX IX workshop, King’s College London, UK (2024).
3. *Panelist on “New data analysis frameworks” at Dawn VII workshop, University of British Columbia, Canada (2024).
4. Gravitational Wave Physics and Astronomy Workshop, University of Birmingham, UK (2024).
5. *Geometry, Analysis and Gravitation Seminar, Queen Mary University of London, UK (2024).
6. London Gravity Meeting, London Institute for Mathematical Sciences, UK (2023)
7. *GravityShapePisa, University of Pisa, Italy (2023).
8. *PCTS/PGI Workshop on Nonlinear Aspects of General Relativity, Princeton University (2023).
9. *Sixième Assemblée Générale du GdR Ondes Gravitationnelles, Toulouse, France (2022); (slides).
10. *Keynote Speaker, Workshop on Bayesian Deep Learning for Cosmology and Time Domain Astrophysics #2, Astroparticule et Cosmologie, Paris (2022); (slides) (video).
11. Gravitational Wave Physics and Astronomy Workshop, Hannover, Germany (2021).
12. *Workshop on Source Inference and Parameter Estimation in Gravitational Wave Astronomy, IPAM, UCLA (2021); (slides) (video).
13. GW Mull Workshop, Scotland (2021).
14. 14th Edoardo Amaldi Conference on Gravitational Waves, online (2021); (video).
15. 24th Capra Meeting on Radiation Reaction in General Relativity, Perimeter Institute, Waterloo, Canada (2021); (video).
16. American Physical Society April Meeting, online (2021).
17. Third Workshop on Machine Learning and the Physical Sciences (NeurIPS 2020), Vancouver, Canada; (extended abstract) (poster).
18. *Workshop on Statistical Methods for the Detection, Classification, and Inference of Relativistic Objects, ICERM (2020); (video).