

# Natalie B. Hogg

PhD student in theoretical cosmology at the ICG, University of Portsmouth

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## Education

- 10/2017 – present    **PhD student**, ICG, University of Portsmouth  
Thesis topic: Interacting dark energy  
Supervisors: Dr Marco Bruni, Prof David Wands, Prof Robert Crittenden
- 09/2013 – 07/2017    **MPhys Astrophysics 1<sup>st</sup> class hon.**, Aberystwyth University  
Master's dissertation: Dynamical Models of Dark Energy  
Supervisor: Prof Carsten van de Bruck (University of Sheffield)
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## Grants, awards and prizes

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|---------|---|----------|
| 10/2018 | <b>Short Term Scientific Mission</b><br>CANTATA COST-Action grant                   | EUR 1100 |
| 10/2018 | <b>Best Poster</b><br>UoP Graduate School Poster Competition                        | GBP 100  |
| 05/2018 | <b>Santander Mobility Award</b><br>University of Portsmouth                         | GBP 500  |
| 04/2018 | <b>Best Talk</b><br>BFWG Research Presentation Day                                  | GBP 120  |
| 01/2018 | <b>Short Term Scientific Mission</b><br>CANTATA COST-Action grant                   | EUR 1050 |
| 07/2017 | <b>Breen Prize</b><br>Best Master's dissertation in physics, Aberystwyth University | GBP 2000 |

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## Talks and posters

- 03/2019 **Is the standard model of cosmology wrong?**  
26<sup>ème</sup> Congrès des Doctorants, Institut de Physique du Globe de Paris  
*Selected as one of nine invited international speakers*
- 01/2019 **Interacting vacuum dark energy**  
Department seminar, ICG, University of Portsmouth
- 01/2019 **New constraints on interacting vacuum dark energy**  
South Coast Cosmology, University of Portsmouth
- 10/2018 **Interacting vacuum dark energy**  
CANTATA meeting, University of Valencia  
*Invited speaker*
- 06/2018 **Interacting vacuum dark energy** (poster)  
Graduate School conference, University of Portsmouth
- 05/2018 **Dark energy: theories and observations**  
BFWG Research Presentation Day
- 04/2018 **Interacting vacuum dark energy** (talk and poster)  
Britgrav18, University of Portsmouth
- 03/2018 **Interacting vacuum dark energy**  
Advances in HEP & Cosmology, University of Southampton
- 12/2017 **Theory session summary**  
Euclid UK Consortium Meeting, University of Portsmouth
- 12/2017 **Interacting dark energy**  
Euclid UK Consortium Meeting, University of Portsmouth
- 09/2017 **Dynamical dark energy**  
CANTATA COST–Action Summer School, NTUA, Corfu

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## Schools, conferences and workshops

- 04/2019 **A History of the Universe in Redshift**  
University of Southampton  
*Member of organising committee*  
*Session chair for “Early Universe” and networking sessions*
- 09/2018 **Data Analysis Workshop**  
ICIC, Imperial College London
- 06/2018 **Summer School on Cosmology**  
ICTP, Trieste
- 09/2017 **CANTATA COST–Action Summer School**  
NTUA (Corfu)

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## Teaching

2019	Isaac Physics	GCSE and A Level Physics workshops	Teaching assistant
2019	Mathematical Methods for Physics	(3 <sup>rd</sup> and 4 <sup>th</sup> year undergraduate course)	Marker
2019	Computational Physics	(2 <sup>nd</sup> year undergraduate course)	Lab demonstrator
2019	Physical Cosmology	(3 <sup>rd</sup> and 4 <sup>th</sup> year undergraduate course)	Marker
2018	Mathematical Physics	(2 <sup>nd</sup> year undergraduate course)	Marker

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## Outreach and public engagement

01/2019	<b>Stargazing Live demonstrator</b>	ICG and Portsmouth Historic Dockyard
03/2018	<b>Night Sky Live “Ask the Expert”</b>	Winchester Science Centre
01/2018	<b>Stargazing Live demonstrator</b>	ICG and Portsmouth Historic Dockyard
12/2017	<b>Meet a Physicist participant</b>	University of Portsmouth

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## Miscellaneous

2018/19 **PhD student representative** Institute of Cosmology and Gravitation

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## Publications

### **Constraints on the interacting vacuum – geodesic CDM scenario**

Matteo Martinelli, Natalie B. Hogg, Simone Peirone, Marco Bruni, David Wands  
[arxiv.org/abs/1902.10694](https://arxiv.org/abs/1902.10694), submitted to MNRAS

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