Name | Jonathan Henry Maynard Davis

D.O.B. 27 November 1987

Research Summary

I have published articles individually and with collaborators on theoretical aspects of Dark Matter detection and phenomenology in various high impact factor journals, with 1 PRL, 1 JCAP and 2 PRD.

- Direct Detection 'Anomalies' Explaining the DAMA modulation with neutrons in PRL 113, 081302, and being the first to show that the CoGeNT Dark Matter 'signal' is in fact consistent with backgrounds in JCAP 08(2014)014.
- Direct Detection Statistics Bayesian and frequentist: a robust treatment of the surface event background for Co-GeNT in JCAP 08(2014)014 and a projection of the neutrino background for future experiments in arXiv:1412.1475.
- Dark Matter Phenomenology Showing in arXiv:1410.5423 that Dark Matter coupled to photons can give a potentially observable signal through diffuse light.

Employment

October 2014 – Postdoctoral Researcher, Institut d'Astrophysique de Paris, France (20 months) May 2016 May 2014 – Postdoctoral Researcher, Institute for Particle Physics Phenomenology, Durham University, October 2014 – United Kingdom (5 months)

Education

October 2010 –	PhD 'The Character of Dark Matter', Institute for Particle Physics Phenomenology, Department
May 2014	of Physics, Durham University, United Kingdom (Advisor: Dr. Céline Bœhm).
2006-2010	MPhys Physics (First Class), University of Warwick, United Kingdom.

Publications

December 2014	Jonathan H. Davis, Dark Matter vs. Neutrinos: The effect of astrophysical uncertainties and timing information on the neutrino floor , arXiv:1412.1475
October 2014	Jonathan H. Davis and Joseph Silk, Glow in the Dark Matter: Observing galactic halos with scattered light, arXiv:1410.5423
July 2014	Jonathan H. Davis, Fitting the annual modulation in DAMA with neutrons from muons and neutrinos, arXiv:1407.1052, Phys. Rev. Lett. 113, 081302 (Editors' Suggestion)
May 2014	Jonathan H. Davis, Christopher McCabe and Céline Bœhm, Quantifying the evidence for Dark Matter in CoGeNT data, arXiv:1405.0495, JCAP 08(2014)014
June 2013	Jonathan H. Davis and Céline Bœhm, Searching for GeV-scale new Gauge Bosons in QGP thermal dilepton production, arXiv:1306.3653
August 2012	Jonathan H. Davis, Torsten Enßlin and Céline Bœhm, A New Method for Analysing Dark Matter Direct Detection Data, arXiv:1208.1850, Phys. Rev. D 89 043505
March 2012	Jonathan H. Davis, Céline Bœhm, Niels Oppermann, Torsten Enßlin and Thomas Lacroix, XENON100 exclusion limit without considering L_{eff} as a nuisance parameter, arXiv:1203.6823, Phys. Rev. D 86 015027

Conference Talks and Seminars

August 2014	DAMA and CoGeNT without Dark Matter
– Nov. 2014	Seminars: Université de Liège (November), Niels Bohr Instituttet Copenhagen (October), University of Nottingham (October), Universität Zürich (September), CP3-Origins Odense (August)
January 2014	A CoGeNT analysis: Is there evidence for a Dark Matter signal?
– July 2014	Conferences: Higgs Symposium – Edinburgh (July), TeVPA/IDM – Amsterdam (June), IOP
	Joint HEPP-APP Meeting – RHUL (April), Moriond Cosmology (March)
	Seminars: Oxford University (February), Paris (February), IPPP (January)

Nationality | British

 $E\text{-mail}\ \big|\ jonathan.h.m.davis@gmail.com$

Awards

2014 $\begin{tabular}{|c|c|c|c|} STEP award (STFC) for funding between March and October 2014 at IPPP, Durham. \end{tabular}$

2010 Styles prize for best overall performance in the MPhys degree (University of Warwick).

Teaching and Outreach

$2011,\ 2012,\ 2013$	Speaker at Particle Physics Masterclass Outreach Event
2012 - 2013	Mathematical Methods 2 – Level 2 workshop supervisor (Durham University)
2011 - 2012	Foundations of Physics 2B - Level 2 workshop supervisor (Durham University)
2011, 2012	Bridge Project Supervisor - What are the factors affecting the height of a water rocket? (Durham University)
2010 - 2011	Particle Theory - Level 4 marker (Durham University)

Academic Activities

December 2012Member of the organising committee for the Young Theorists' Forum 2012.September 2012Member of the organising committee for BUSSTEPP 2012.