

Blackett Laboratory

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Jack Halliday

Bio

I'm a post doctoral researcher working on the MAGPIE pulsed-power generator (1.4 MA, 250 ns). My research interests include: X-Ray driven plasma ablation experiments, laboratory astrophysics, and diagnostic development.

Appointments

2020 **Post doctoral researcher**, *Imperial College London*.

Experimental study of the interaction between prompt X-rays and solid density targets.

Education

2016–2020 **PhD Plasma Physics**, *Imperial College London*.

Project: Application of X-Ray diagnostics to the characterisation of pulsed-power driven magnetic-reconnection experiments.

Supervisor: S. V. Lebedev

2012–2016 **MSci Physics**, *Imperial College London*, First Class (Hons).

Final year project: An experimental study of shock waves in magnetised, high energy density plasma flows

Contributed Talks and Posters

2019 APS Division of Plasma Physics Annual Meeting, Fort Lauderdale, Florida

2018 APS Division of Plasma Physics Annual Meeting, Portland, Oregon

2018 EPS Plasma Physics Division Annual Meeting, Prague, Czechia

2018 High Energy Density Laboratory Astrophysics, Kurashiki, Japan

2017 APS Division of Plasma Physics Annual Meeting, Milwaukee

2017 Dense Z Pinches, Lake Tahoe, California

Teaching Experience

2020 MSci project supervision

2020 Demonstrator for second year

2018–2019 Demonstrator for third year undergraduate microprocessor course

2016–2108 Demonstrator for second year undergraduate spectroscopy lab

2016–2018 Supervisor for first year undergraduate projects

Publications

- 2020 L. G. Suttle, G. C. Burdiak, C. L. Cheung, T. Clayson, J. W. D. Halliday, J. D. Hare, S. Rusli, D. R. Russell, E. R. Tubman, A. Ciardi, N. F. Loureiro, J. Li, A. Frank and S. V. Lebedev. "*Interactions of magnetized plasma flows in pulsed-power driven experiments.*" *Plasma Physics and Controlled Fusion* 62, 1. doi: 10.1088/1361-6587/ab5296
- 2019 C. A. J. Palmer, P. T. Campbell, Y. Ma, L. Antonelli, A. F. A. Bott, G. Gregori, J. W. D. Halliday, Y. Katzir, P. Kordell, K. Krushelnick, S. V. Lebedev, E. Montgomery, M. Notley, D. C. Carroll, C. P. Ridgers, A. A. Schekochihin, M. J. V. Streeter, A. G. R. Thomas, E. R. Tubman, N. Woolsey, and L. Willingale. "*Field reconstruction from proton radiography of intense laser driven magnetic reconnection.*" *Physics of Plasmas* 26, p. 083109. doi:10.1063/1.5092733
- 2019 J. D. Hare, J. Macdonald, S. N. Bland, J. Dranczewski, J. W. D. Halliday, S. V. Lebedev, L. G. Suttle, E. R. Tubman, and W. Rozmus. "*Two-colour interferometry and Thomson scattering measurements of a plasma gun*" *Plasma Physics and Controlled Fusion* 61, 8. doi: 110.1088/1361-6587/ab2571
- 2018 L. G. Suttle, J. D. Hare, S. V. Lebedev, A. Ciardi, N. F. Loureiro, G. C. Burdiak, J. P. Chittenden, T. Clayson, J. W. D. Halliday, N. Niasse, D. Russell, F. Suzuki-Vidal, E. Tubman, T. Lane, J. Ma, T. Robinson, R. A. Smith, and N. Stuart. "*Ion heating and magnetic flux pile-up in a magnetic reconnection experiment with super-Alfvénic plasma inflows.*" *Physics of Plasmas* 25, p. 042108. doi: 10.1063/1.5023664
- 2017 J. D. Hare, L. G. Suttle, S. V. Lebedev, N. F. Loureiro, A. Ciardi, J. P. Chittenden, T. Clayson, S. J. Eardley, C. Garcia, J. W. D. Halliday, T. Robinson, R. A. Smith, N. Stuart, F. Suzuki-Vidal, and E. R. Tubman. "*An experimental platform for pulsed-power driven magnetic reconnection.*" *Physics of Plasmas* 25, p. 055703. doi: 10.1063/1.5016280
- 2017 J. D. Hare, S. V. Lebedev, L. G. Suttle, N. F. Loureiro, A. Ciardi, G. C. Burdiak, J. P. Chittenden, T. Clayson, S. J. Eardley, C. Garcia, J. W. D. Halliday, N. Niasse, T. Robinson, R. A. Smith, N. Stuart, F. Suzuki-Vidal, G. F. Swadling, J. Ma, and, J. Wu. "*Formation and Structure of a Current Sheet in Pulsed-Power Driven Magnetic Reconnection Experiments*". *Physics of Plasmas* 24, p. 102703. doi: 10.1063/1.4986012