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**Electron acceleration in pulsed-power driven magnetic-reconnection experiments** JONATHAN HALLIDAY, JACK HARE, SERGEY LEBEDEV, LEE SUTTLE, SIMON BLAND, THOMAS CLAYSON, ELEANOR TUBMAN, Imperial College London, SERGEI PIKUZ, TANYA SHELKOVENKO, Cornell University — We present recent results from pulsed-power driven magnetic reconnection experiments, fielded on the MAGPIE generator (1.2 MA, 250 ns). The setup used in these experiments produces plasma inflows which are intrinsically magnetised; persist for many hydrodynamic time-scales; and are supersonic. Previous work has focussed on characterising the dynamics of bulk plasma flows [1] [2], using a suite of diagnostics including laser interferometry, (imaging) Faraday rotation, and Thompson scattering. Measurements show the formation of a well defined, long lasting reconnection layer and demonstrate a power balance between the power into and out of the reconnection region.

The work presented here focuses on diagnosing non-thermal electron acceleration by the reconnecting electric field. To achieve this, metal foils were placed in the path of accelerated electrons. Atomic transitions in the foil were collisionally excited by the electron beam, producing a characteristic X-Ray spectrum. This X-Ray emission was diagnosed using spherically bent crystal X-Ray spectrometry, filtered X-Ray pinhole imaging, and X-Ray sensitive PIN diodes.

[1]J. D. Hare et al. (2017) **Phys. Rev. Lett. 118, 085001**
[2]L. G. Suttle et al. (2016) **Phys. Rev. Lett. 116, 225001**

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