

## Long term plasma shape conservation in exploding wire systems in open air

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Exploding wire systems start as a solid cylinder of metal that, due to the effect of a large electrical current passing through it, became a plasma.

Later evolution of this plasma, long time after the electrical current that formed this material phase, has not been probed extensively.

Streak images of the radial behaviour, not shown here, demonstrate a halt in the plasma expansion right after the electrical current reach its maximum, and as fig. 1 shows with images in the visible spectrum, the formed plasma retain its initial cylindrical shape up to times much longer the the end of the electrical discharge, regardless of the presence or not of a dark pause in the initial stages of the discharge through the wire.

Spectra and photodiode signals confirm the presence of the imaged plasma and allow for the temperature characterization of these long time metal plasmas.

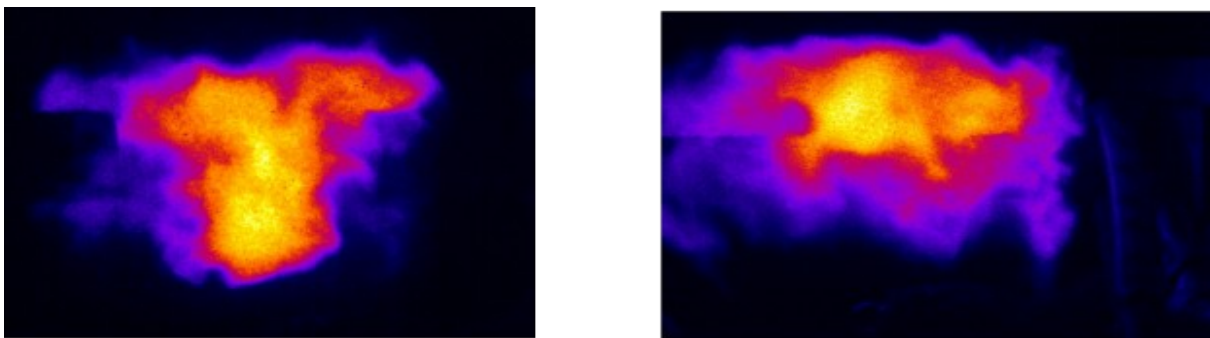


Figure 1: Optical images of the wire 86  $\mu$ s after the beginning of the electrical discharge at two different charging voltages in the ALEX system.