

Abstract Submitted
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Spatially resolved optical-emission spectroscopy of a radio-frequency driven iodine plasma source¹ JAMES DEDRICK, SCOTT DOYLE, York Plasma Institute, Department of Physics, University of York, Heslington, YO10 5DQ, UK, PASCALINE GRONDEIN, ANE AANESLAND, Laboratoire de Physique des Plasmas-CNRS, Ecole Polytechnique, 91128 Palaiseau, FR — Iodine is of interest for potential use as a propellant for spacecraft propulsion, and has become attractive as a replacement to xenon due to its similar mass and ionisation potential. Optical emission spectroscopy has been undertaken to characterise the emission from a low-pressure, radio-frequency driven inductively coupled plasma source operating in iodine with respect to axial distance across its transverse magnetic filter. The results are compared with axial profiles of the electron temperature and density for identical source conditions, and the spatial distribution of the emission intensity is observed to be closely correlated with the electron temperature.

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