

Supplementary Material

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To demonstrate the variety of shadowgrams in our dataset, we show four examples below in Fig. 1. The test data includes images with different shock position, images with no shock, images with multiple dust patterns and images with overlapping objects.

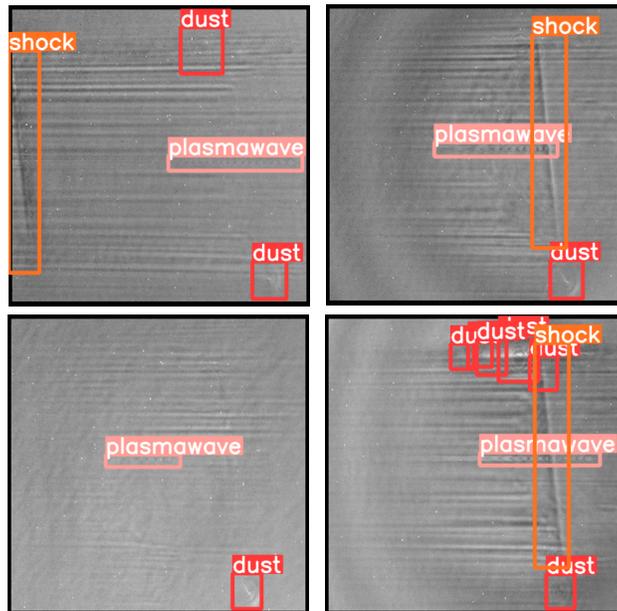


Figure 1: Image variety.

Comparing the predicted peaks on the electron energy spectra (Fig. 5 in the manuscript) to the manually-labeled ground-truth. The average prediction error is 9.6% for all the peaks shown here.

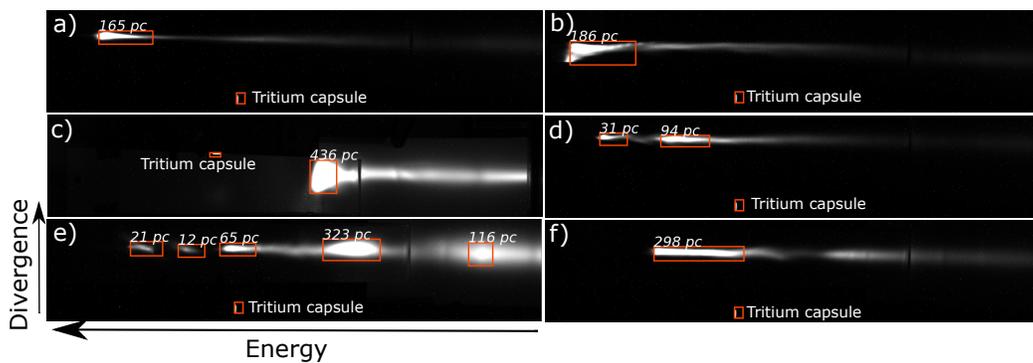


Figure 2: Ground-truth spectra with calculated charge numbers.

The algorithm for model training is publicly available at:

<https://github.com/PULSE-ML/Object-detection-in-laser-plasma-experiments>