A new tri-particle backlighter for radiography and stopping power measurements in HED plasmas at OMEGA and the NIF NNS

Graeme Sutcliffe February 2022



A new tri-particle backlighter platform which extends the capability of the existing D³He proton backlighter has been developed and tested

Three probe particles provide additional information required to distinguish:

- Magnetic fields
- Electric fields
- Scattering



The D³He backlighter is a unique platform, used extensively for radiography on OMEGA and the NIF





Amplification of magnetic fields in a turbulent plasma

Tzeferacos et al., Nature Comm., 2018

Scaled Lab-Astro demonstration of kink instability in the Crab Nebula Jet

C.K. Li et al., Nature Communications 2016

Fast magnetic reconnection in highly-extended current sheets





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