

Hydrodynamics Driven by Intense short-pulse lasers

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In our field we typically associate hydrodynamics with experiments driven by nanosecond laser pulses. However hydrodynamic motion can of course also be initiated by the interaction of a short pulse laser. Whilst such interactions do not provide such a readily controllable platform for hydrodynamic experimentation as their long-pulse counterparts, it is nevertheless interesting to investigate such interactions as they can facilitate the exploration of regimes that are beyond the reach of long pulse lasers of comparable size. In addition such work can have relevance to some of the 'advanced' approaches to Laser-Fusion, such as Fast Ignition. In this talk we will consider some experimental results from both picosecond and 10s femtosecond laser systems which rely upon hydrodynamic modelling to be properly understood. We shall also consider some attempts to exploit the ability of short pulses to drive quite extreme hydrodynamic phenomena.