

Abstract Submitted
for the DPP17 Meeting of
The American Physical Society

Shock accelerated particles in inertial fusion R BINGHAM, STFC RAL, Didcot, UK, E BOELLA, KU Leuven, Belgium, R TRINES, R BAMFORD, STFC RAL, Didcot, UK, RA CAIRNS, University of St Andrews, UK, M VRANIC, RA FONSECA, F CRUZ, LO SILVA, IST Lisbon, Portugal, S LEBEDEV, Imperial College London, UK, A RIGBY, G GREGORI, Oxford University, UK — We consider both electrostatic and magnetized shocks in inertial fusion. It is known that strong localized electric fields exist in laser compressed pellets that are associated with shock like structures and these are responsible for DT fuel separation. Here we propose to excite strong shocks in the low density corona to accelerate ions as an alternative to the ion fast ignition schemes where a separate target is used. We also consider shock accelerated particles in magnetized liner inertial fusion where the Z pinch drives a strong shock. We present theory and simulations of both electrostatic and magnetized shock accelerated particles.

Raoul M Trines
STFC RAL, Didcot, UK

Date submitted: 14 Jul 2017

Electronic form version 1.4