Abstract Submitted
for the DPP19 Meeting of
The American Physical Society

Progress Toward First Plasma on MAST Upgrade JAMES HARRISON, CCFE, MAST TEAM TEAM — The MAST Upgrade spherical tokamak has unique capabilities to address some of the key issues facing the development of fusion energy. Its main objectives are: 1) development of novel exhaust concepts, 2) contribution to the knowledge base for ITER and 3) to explore potential routes to smaller/cheaper fusion reactors. To fulfil these aims, it is equipped with 19 new poloidal field coils and closed divertors with Super-X capability. BT has been increased by 50% and the pulse length and Ip have increased to 5s and 2MA respectively. Auxiliary heating is provided by on and off axis NBI. The divertors are diagnosed with probes, bolometers, Thomson scattering, IR, visible imaging and spectroscopy. Fast ion physics studies are enhanced with a new fast ion loss detector. The construction of MAST Upgrade is complete and commissioning is well underway. Progress toward first plasma will be presented, including integrated commissioning of the tokamak subsystems and calibration of the magnetics sensors. Plans for the first experimental campaign will also be presented. Work supported by RCUK [grant number EP/I501045] and Euratom.

James Harrison
CCFE

Date submitted: 03 Jul 2019 Electronic form version 1.4