Abstract Submitted
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MAST Upgrade Status and Future Enhancements[1] JAMES HARRISON, Culham Centre for Fusion Energy, MAST UPGRADE 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 gas fuelling system allows for injection from 10 poloidal locations. 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. Following the construction phase, further enhancements are underway including new diagnostics, a cryoplant to serve the cryopumps and 2 additional neutral beams to increase the heating power from 5 to 10MW.

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