

Abstract Submitted
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First Results from a Charged Fusion Products Diagnostic at MAST¹ RAMONA V. PEREZ , Physics Dept. FIU, Miami, FL, SCOTT Y. ALLAN, EURATOM/CCFE Fusion Association, Culham Science Centre, Oxon, UK, WERNER U. BOEGLIN, Physics Dept. FIU, Miami, FL, MARCO CECCONELLO , Dept. of Physics and Astronomy, Uppsala University, Uppsala, SE, KEN G. MCCLEMENTS, EURATOM/CCFE Fusion Association, Culham Science Centre, Oxon, UK, DOUGLASS S. DARROW , PPPL, Princeton, NJ, MAST TEAM — We designed, built and installed in MAST a 4-channel solid-state detector array for the detection of the charged deuterium-deuterium fusion products protons and tritons. The array has been mounted at the end of the reciprocating probe arm in MAST allowing it to sample a range of radial positions. First data have been taken in August 2013. The detector signals have been digitized with a 60MHz sampling rate and have been continuously recorded during plasma discharges. Protons and tritons were readily identified and counted. The observed count rates showed clear dependence on the neutral beam power and were modulated synchronous with saw-teeth. Comparison with data obtained from the MAST neutron camera and the fission chamber neutron detector is planned. We found that time resolutions as low as at least 1 ms were achievable. The detector performance and first analysis results for various plasma scenarios will be presented.

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