Abstract Submitted
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HHFW Heating and Current Drive Progress on NSTX[1] P.M. RYAN, E.F. JAEGER, J.B. WILGEN, ORNL, J.C. HOSEA, J.R. WILSON, R.E. BELL, S. BERNABEI, B.P. LEBLANC, C.K. PHILLIPS, PPPL, L. DELGADO-APARICIO, K. TRITZ, John Hopkins University, S. SABBAGH, Columbia University, H. YUH, Nova Photonics — Operation of NSTX at $B_T(0) = 0.55$ T has increased the core power deposition and heating efficiency of the 30 MHz High Harmonic Fast Waves (HHFW) compared to previous $B_T(0) \leq 0.45$ T operation, particularly when launching longer parallel wavelengths. This improvement is attributed in part to moving the onset density at which the fast waves begin to propagate into the plasma to a point further from the wall [1]. At this field strength the HHFW power deposition at $k_{||} = 7$ m^{-1} is comparable to that of $k_{||} = 14$ m^{-1}, and core heating at $k_{||} = 3$ m^{-1} is now seen, albeit at lower efficiency. Comparisons with power deposition from full-wave models (AORSA) will be made and MSE measurements of driven current will be presented.
[1] see Invited Talk by J. Hosea, this conference.

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Philip Ryan
Oak Ridge National Lab

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