

Abstract Submitted
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Current Density Profile Evolution with Lower Hybrid Current Drive on EAST¹ D.L. BROWER, UCLA, H. LIAN, W.M. LI, H.Q. LIU, ASIPP, W.X. DING, UCLA, Y.F. WANG, Y.Q. CHU, Y.X. JIE, ASIPP — Weak or reversed magnetic shear plasma scenarios with internal transport barriers (ITB) are considered to be prime candidates for steady-state (or long pulse discharge) high-confinement plasma operation. This can be achieved using an optimized q profile by controlling the heating and current drive systems in tokamaks. The eleven chord POLarimeter-INTeferometer (POINT) system on EAST can provide internal magnetic field measurements with fast time response (up to 1 MHz) thereby allowing realtime current and q profile monitoring using fast equilibrium reconstruction. High β_N (1.8-2), $H_{98} = 1.1$ plasmas with good confinement are achieved with Neutral Beam Injection (NBI) and Lower Hybrid Wave (LHW). The central q profile is shown to be flat by POINT measurements. A new error correction method to decrease the stray light error for Faraday effect measurement is applied and stray light contamination is reduced to 0.5-1 degs. from 2-5 degs. Further efforts to reduce stray light are underway and essential for realtime q profile measurement required to control and extend high-performance scenarios developed on EAST.

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