

Abstract Submitted  
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**Observation of Self Generated Flows in Tokamak Plasmas With Lower Hybrid Driven Current** ALEXANDER INCE-CUSHMAN, JOHN RICE, MATTHEW REINKE, MIT, MANFRED BITTER, KENNETH HILL, PPPL, MARTIN GREENWALD, GREGORY WALLACE, RONALD PARKER, JERRY HUGHES, PAUL BONOLI, CATHERINE FIORE, SHUNICHI SHIRAIWA, AMANDA HUBBARD, STEPHEN WOLFE, IAN HUTCHINSON, MIT, RANDY WILSON, PPPL, EARL MARMAR, MIT — In Alcator C-Mod discharges lower hybrid waves have been shown to induce a counter-current change in toroidal rotation of up to 60 km/s in the central region of the plasma ( $r/a \sim < 0.4$ ). This modification of the toroidal rotation profile develops on a time scale comparable to the current redistribution time ( $\sim 100$ ms) but longer than the energy and momentum confinement times ( $\sim 20$ ms). Comparison of co-and counter-current injected waves indicates that current drive (as opposed to heating) is responsible for the rotation profile modifications. Furthermore, the changes in central rotation velocity induced by lower hybrid current drive (LHCD) are well correlated with changes in normalized internal inductance. The application of LHCD has been shown to generate strongly sheared rotation profiles and a negative increment in the radial electric field profile consistent with a fast electron pinch. Supported by USDoE award DE-FC02-99ER54512.

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