

Abstract Submitted
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Effects of ICRF and/or LHCD on SOL density profiles and fluctuations in Alcator C-Mod CORNWALL LAU, MIT PSFC, GREG HANSON, ORNL, YIJUN LIN, STEVE WUKITCH, IAN FAUST, JERRY HUGHES, BRIAN LABOMBARD, YUNXING MA, ORSO MENEGHINI, RON PARKER, SYUN'ICHI SHIRAIWA, JIM TERRY, GREG WALLACE, MIT PSFC, JOHN WILGEN, ORNL — Antenna operation and antenna-plasma interactions during RF heating and current drive are greatly influenced by the scrape-off-layer (SOL) densities. A swept-frequency X-mode reflectometer installed on Alcator C-Mod measures the SOL density profiles and fluctuations at three poloidal locations adjacent to the Lower Hybrid (LH) launcher. The application of LH power consistently decreases the density in front of the LH launcher, consistent with a ponderomotive force; the application of ICRF power also decreases the density in front of the LH launcher, which may be consistent with ICRF sheath induced convective cells. LH power also seems to strongly modify the density profile shape in the near and far SOL, especially at high line averaged densities. The reflectometer measured density profiles and preliminary results on phase fluctuation behavior will be presented and compared with measurements from other diagnostics, such as Thomson scattering and gas puff imaging diagnostic. This work is supported by U.S. DoE under awards DE-AC05-00OR22725 and DE-FC02-99ER54512.

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