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First Results from Alcator C-Mod SOL Reflectometer[1] CORNWALL LAU, MIT, GREG HANSON, JOHN WILGEN, Oakridge National Laboratory, YIJUN LIN, STEVE WUKITCH, MIT — The study of antenna-plasma interactions during RF heating and current drive is greatly influenced by the SOL density profile. A swept-frequency X-mode reflectometer has recently being built for Alcator C-mod to measure the SOL density profiles at top, middle and bottom locations in front of the new Lower Hybrid Launcher and adjacent to one of the two-strap ICRF antennas. The system operates between 100 and 146 GHz and covers a density range of approximately $10^{16}$to 10^{20}m^{-3} at 5-5.4T at sweep rates from 10 μs to 1 ms. First data from the reflectometer will be presented. SOL density profiles will be shown for different plasma conditions, such as various ICRF and LHRF power, L or H regimes, and different line averaged densities. Comparison between the reflectometer and other density profile diagnostics on Alcator C-Mod will also be presented.

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