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Fast ion charge exchange measurements during minority heating in Alcator C-Mod KEN LIAO, WILLIAM ROWAN, IGOR BESPAMYATNOV, University of Texas Institute for Fusion Studies, STEVE WUKITCH, YIJUN LIN, AARON BADER, MIT Plasma Science and Fusion Center, DAVID PACE, Oak Ridge Institute for Science and Education, NAOTO TSUJII, MIT Plasma Science and Fusion Center, AND ALCATOR C-MOD TEAM — Ion cyclotron range of frequencies (ICRF) power is the primary auxiliary heating method in Alcator C-Mod and we utilize D(H) and D(^{3}He) minority heating scenarios (minority in parentheses). Measuring the energetic ion distribution provides a direct means to validate simulations used to calculate ICRF power deposition. The fast and thermal minority ion distributions are measured by observing line emission using active charge exchange where the H I (656.3 nm) or He II (468.6 nm) lines are monitored for the Hor ^{3}He minority heating scenarios, respectively. The ^{3}He measurements have developed more quickly than H measurement due to improved S/N (ambient D emission interferes with H line). Initial results from energetic ion detection, minority ion density, temperature, and velocity profiles will be reported for D(^{3}He) discharges. Diagnostic design for H minority measurements will also be presented.

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