

Abstract Submitted  
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**Reversed Shear Alfvén Eigenmodes in the Presence of Current Ramps and ICRF Minority Tails in Alcator C-Mod\*** M. PORKOLAB, E. EDLUND, C. BOSWELL, N. BASSE, Y. LIN, L. LIN, J.A. SNIPES, S.J. WUKITCH, MIT PSFC, G.J. KRAMER, PPPL — Alfvén cascades (ACs), or equivalently, reverse shear Alfvén eigenmodes (RSAE) have been observed in Alcator C-Mod during current ramps with intense ICRF minority heating<sup>1</sup>. Both phase contrast imaging (PCI) and magnetic pick-up coils have been used to study the frequency spectrum. PCI can also give an estimate of the  $k_\theta$ -spectrum. From such data, the evolution of the q-profile has been deduced. The results indicate that up to 0.18 seconds reversed shear should be present with peak electron temperatures approaching 5 keV, offering a reasonable target plasma for off-axis lower hybrid current drive (LHCD) to maintain the reversed shear for AT studies. Without LHCD the current profiles relax to monotonic q-profiles and sawteeth set in by 0.3 sec. Using the ideal MHD code NOVA-K<sup>2</sup>, the frequency chirping characteristics of these modes have been modeled with good accuracy and the code predicts accurately the minimum frequency  $\Delta\omega$ , which may be interpreted as the geodesic deformation of the Alfvén continuum at low frequency<sup>3</sup>. (1) M. Porkolab et al, Proc. 15<sup>th</sup> Conf. High RF Power in Plasmas, Park City, UT, (2005). (2) C. Z. Cheng, Phys. Rep. 211, **1** (1992). (3) M.S. Chu, J. M. Greene, L.L. Lao et al., Phys. Fluids B **4**, 3713 (1992). \*Work supported by USDOE Contract DE-AC02-76-CH0-3073 and Cooperative Agreement No. DE-FC02-99-ER54512.

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