

Abstract Submitted  
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**Search for gyrokinetic dependencies in helium transport at Alcator C-Mod**<sup>1</sup> KENNETH LIAO, WILLIAM ROWAN, DAVID HATCH, IGOR BESPAMYATNOV, WENDELL HORTON, University of Texas at Austin, Institute for Fusion Studies — Helium-3 and helium-4 impurity transport measurements and density profile measurements have been obtained on Alcator C-Mod in a variety of discharge conditions, using the core Charge Exchange Recombination Spectroscopy (CXRS) diagnostic. The helium concentrations range from trace ( $< 2\%$ ) to large minority ( $\sim 20\%$ ). L-mode, H-mode, and I-mode results are included, with Ohmic heated, ICRF heated, and LH heated plasmas. Helium profiles are observed to vary with plasma current, and also change in time during ICRF shots. Linear and non-linear gyrokinetic simulations are performed for some shots using the GENE code. Sensitivity scans are done for magnetic shear, impurity density, and other plasma parameters and transport scalings are compared with experimental results. Simulated transport flux is compared with experimentally derived D and  $v$  parameters.

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