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Neutral beam current drive in Field Reversed Configurations SANGEETA GUPTA, SEAN DETTRICK, DAN BARNES, Tri Alpha Energy, THE TAE TEAM — The Neutral beam current drive mechanism, originally known as Ohkawa Current [1], is investigated for FRC plasmas using small amounts of high Z impurities. For this purpose, transport equations of high Z impurity ions (e.g.,  $O^{4+}$ ) along with Deuterium plasma are solved numerically using a multi-species quasi-1D (Q1D) transport code coupled with a Monte-Carlo (MC) code for fast particle dynamics. High Z impurities raise plasma  $Z_{\rm eff}$ , thereby increasing radiation and large pitch angle scattering of neutral beam fast particles. However, on the other hand, high Z impurities can also prevent dragging of electrons in the fast ion direction and hence contribute to current drive. Results for different impurity concentrations, beam power and other plasma parameters will be presented.

[1] T. Ohkawa, Nuclear Fusion, 185 (10) 1970.

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