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Counter Current Drive with ECH and NBI[1] C.C. PETTY, T.C. LUCE, Y.R. LIN-LIU, J. LOHR, R. PRATER, General Atomics, B.W. RICE, Lawrence Livermore National Laboratory — In experiments on the DIII-D tokamak, the non-inductive current profiles resulting from counter current drive using electron cyclotron heating (ECH) and neutral beam injection (NBI) have been measured. The evolution of the poloidal magnetic flux as measured by motional Stark effect polarimetry was the basis for experimentally determining the non-inductive current profiles. The counter current drive from ECH at $q \approx 3$ was found to be radially localized with the peak of the driven current near the power deposition location. Although the measured radial profile was broader than theoretical predictions (a similar result to that found for co current drive with ECH), the magnitude of the experimental and theoretical counter current drive were in good agreement. Even though current drive from NBI is not expected to be as localized as that from ECH, the measured radial profile of the NBI driven current was found to be even broader than theoretical predictions. Comparisons have been made between the non-inductive current profiles for co and counter NBI for plasmas with similar bootstrap currents.

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[X] Prefer Oral Session
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Special instructions: DIII-D Contributed Oral Session, immediately following TC Luce

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