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Internal Magnetic Field Measurement on C-2 FRC Plasma HIROSHI GOTA, Tri Alpha Energy, Inc., KURT KNAPP, BIHE DENG, MATTHEW THOMPSON, MICHEL TUSZEWSKI, ALAN VAN DRIE, TAE TEAM — Three-axis internal magnetic probes are being developed to measure simultaneously B_z, B_t and B_r of a field-reversed configuration (FRC) plasma from the geometric axis (r=0) to outside of the separatrix in C-2. The probe assembly consists of 30 commercial chip-inductors (10 different radial positions of each field-component with 5 cm apart), OD$\sim$0.25" stainless-steel tube with 5-mil wall for the vacuum boundary, and interlocking Boron-Nitride jackets as a plasma facing material. In C-2, it is important to understand field-structure of FRC plasma during translation and colliding two-FRCs in the confinement section as well as the equilibrium/quiescent phase. With 6-chord interferometry located in the midplane of C-2, the internal structure of FRC can be compared and discussed by using a rigid-rotor profile model for the field and the density of FRCs. The preliminary result of internal field measurements will be presented at the meeting as well as the detailed probe design.

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