Abstract Submitted
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3 Tesla superferric cable-in-conduit dipole for the Ion Ring of the MEIC collider[1] KATHRYN O'QUINN, Texas AM University, DANIEL CHAVEZ, Texas AM Univeristy / Universidad de Guanajuato, PETER MCINTYRE, Texas AM University — The design and construction of a 3 Tesla model dipole for the Ion Ring lattice of the electron-ion collider MEIC is presented. The dipole uses a 15 kA NbTi cable-in-conduit (CIC) conductor in a superferric magnetic design. All turns of the winding are precisely positioned in the body of the dipole using G- 11 support components, and the flared ends are formed using motorized bend tooling. Liquid helium flows through the center tube of the CIC conductor so that all NbTi strands are in direct contact with liquid for stabilization against micro quenches. A mockup winding was built and evaluated to confirm the precision of conductor placement and the fabrication methods. We are now beginning construction of long-length CIC cable and we will then build a 1.2 m model dipole.

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