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Implementation of laser-driven capacitor coil targets to magnetize an implosion at OMEGA[1] C MCGUFFEY, M BAILLY-GRANDVAUX, UCSD CER, JJ SANTOS, UBordeaux - CNRS-CEA, CELIA, France, R FLORIDO, U de Las Palmas de Gran Canaria, Spain, C WALSH, LLNL, F SUZUKI-VIDAL, ICL, FN BEG, UCSD CER, A CALISTI, UMarseille, France, JR DAVIES, LLE, S FERRI, UMarseille, France, MA GIGOSOS, U de Valladolid, Spain, JJ HONRUBIA , UPolitecnica de Madrid, Spain, RC MANCINI, UNR, T NAGAYAMA, SNL, VT TIKHONCHUK , UBordeaux - CNRS-CEA, CELIA, France — We present the design of an experiment using laser-driven capacitor-coil targets (CCTs) at OMEGA. These CCTs, consisting of 2 parallel plates and a wire connector loop, have been demonstrated elsewhere to produce >100 T fields over volumes $\gg$mm^3. Such fields could be applied to various high energy-density experiments to investigate B field effects. Here, two coils in Helmholtz configuration will be driven by 5 OMEGA beams/coil to produce an estimated seed field of ˜50T midway between the coils. To demonstrate their use in an HED target, the CCTs will be placed around a cylindrical implosion of Ar-doped D_2 gas driven by 40 OMEGA beams (15 kJ, 1.5ns). The seed B field will be characterized, and Ar K-shell emission will be temporally and spectrally resolved. Our modeling with MHD and radiative calculations predicts the B field can alter the hydrodynamic behavior so much as to be measurable in the Ar spectroscopy. The design and initial results will be shared.

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