Abstract Submitted
for the DFD17 Meeting of
The American Physical Society

**The Richtmyer-Meshkov Instability on a Circular Interface in Magnetohydrodynamics** WOLFGANG BLACK, W. CURTIS MAXON, Univ of Missouri - Columbia, NICHOLAS DENISSEN, Los Alamos National Laboratory, JACOB MCFARLAND, Univ of Missouri - Columbia — Hydrodynamic instabilities (HI) are ubiquitous in high energy density (HED) applications such as astrophysics, thermonuclear weapons, and inertial fusion. In these systems, fluid mixing is encouraged by the HI which can reduce the energy yield and eventually drive the system to equilibrium. The Richtmyer-Meshkov (RM) instability is one such HI and is created when a perturbed interface between a density gradient is impulsively accelerated. The physics can be complicated one step further by the inclusion of Magnetohydrodynamics (MHD), where HED systems experience the effects of magnetic and electric fields. These systems provide unique challenges and as such can be used to validate hydrodynamic codes capable of predicting HI. The work presented here will outline efforts to study the RMI in MHD for a circular interface utilizing the hydrocode FLAG, developed at Los Alamos National Laboratory.

Wolfgang Black
Univ of Missouri - Columbia

Date submitted: 01 Aug 2017 Electronic form version 1.4