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Initial Hydrodynamic Results for a Free-Surface Liquid Gallium

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— Free-surface MHD shear flows have application to both astrophysics and fusion plasmas, but very little relevant experimental research has been done on them. To measure and observe physics relevant to these topics, a channel has been fabricated for the free surface flow of magnetized liquid gallium. This channel is 16cm wide, 2cm deep, and 70cm long. As a benchmark, initial water data was taken using Laser Doppler Velocimetry (LDV). Average flow profiles and fluctuations were measured as a function of Reynolds number.

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