

Abstract Submitted
for the DFD19 Meeting of
The American Physical Society

The 2019 MRV Challenge Experiment at Stanford University¹

CHRISTOPHER J. ELKINS, ANDREW J. BANKO, JOHN K. EATON, Stanford University, MICHAEL J. BENSON, United States Military Academy — Specific measurement techniques and Magnetic Resonance Velocimetry (MRV) results for the 2019 MRV Challenge experiment at Stanford University will be presented in detail. Some basic physics behind MRV as well as a general description of how pulse sequences (series of radio frequency pulses and applied magnetic field gradients) are used to make velocity measurements will be introduced. This will provide context for the motivation behind the challenge and the differences observed among the measurements by the participating labs since each lab uses a different pulse sequence in a different MRI system. Specific to the Stanford experiment, the equipment used and the overall setup of the square cross-section U-bend channel in the 3T magnet at the Richard M. Lucas Center for MRI at Stanford will be described. In addition, the parameters of the MRV pulse sequence and post processing steps of the data will be explained. Finally, an overview of the results and uncertainties will be given along with a discussion of the sources of these uncertainties.

¹Department of Defense

John Eaton
Stanford University

Date submitted: 29 Jul 2019

Electronic form version 1.4