

Abstract Submitted  
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**Analysis of the formation and evolution of vortex rings in non Newtonian fluids using 3D PTV**<sup>1</sup> ABHISHEK BAJPAYEE, ALEXANDRA TECHET, Massachusetts Institute of Technology — Formation and evolution of vortex rings have been studied for a long time but mostly only in Newtonian fluids. However, many fluids in nature and in the industry such as blood, crude oil, etc., exhibit non Newtonian characteristics. Palacios-Morales and Zenit recently studied the formation of vortex rings in shear thinning liquids for the first time using 2D PIV and compared experimental findings with theoretical predictions. The authors recently demonstrated the applicability of Light Field (LF) imaging to conduct 3D Particle Tracking Velocimetry (PTV) to study densely seeded flow fields and their evolution over time using synthetic data. LF based 3D PTV is now used to quantitatively study vortex rings created in Glycerin based on multiple parameters and the results are compared with previous findings.

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