

Abstract Submitted  
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**Particle Image Rheometry (PIR)** ADIB AHMADZADEGAN, PAVLOS P VLACHOS, AREZOO M ARDEKANI, Purdue University — We will be presenting a method utilizing PIV to determine the rheological properties of the surrounding fluid. Passive microrheology methods use particle tracking to find the mean squared displacement (MSD) of the trajectories. Particle tracking methods face localization error and cannot be used for high concentration particle suspensions. Our method eliminates the use of tracking in micro-rheology and finds the MSD directly from the images using cross-correlation techniques. This novel method allows us to resolve the spatial and temporal rheological properties of the sample of interest. We will compare the results of our method with the existing methods and show validations using both synthetic images and experimental datasets.

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