

# Particle Tracking Velocimetry

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Daniel P. Lathrop<sup>1</sup>, Enrico Fonda<sup>1,2</sup>

<sup>1</sup> University of Maryland, <sup>2</sup> University of Trieste

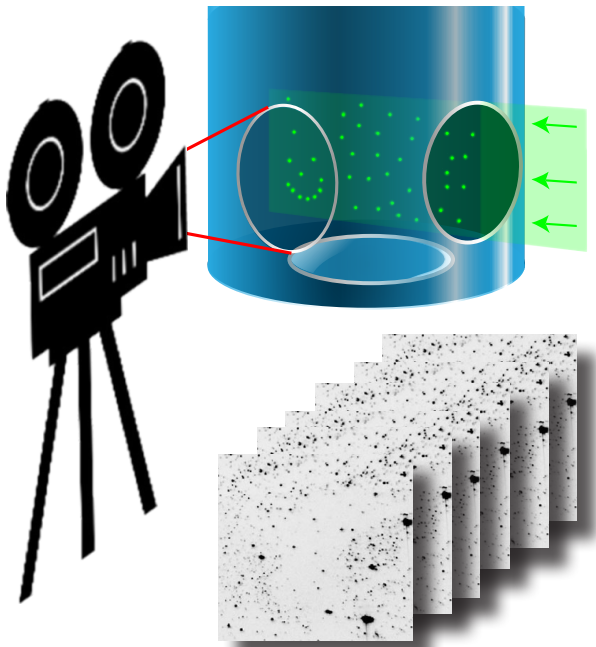
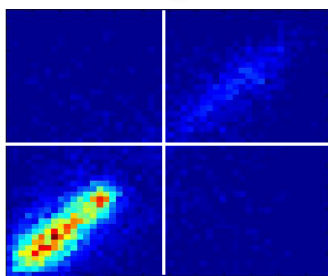


image sequence / movie



trajectories (x-y plane)



analysis

(e.g. time delayed velocity distribution)

## Data collection – experimental setup

- Optical setup – similar to PIV
  - Laser sheet
  - Camera
- Particles
- Storage

## Tracking software

- image restoration
- feature point detection
- trajectory linking

John C. Crocker and Eric R. Weeks

<http://www.physics.emory.edu/~weeks/idl/>

ETH Zurich PTV group:

<http://www.mosaic.ethz.ch/Downloads/ParticleTrackerCSourceAndClient>

and this is the ImageJ plugin

<https://weeman.inf.ethz.ch/ParticleTracker/>

Sbalzarini IF, Koumoutsakos P. Feature point tracking and trajectory analysis for video imaging in cell biology. *J. Struct. Biol.* 2005;151(2):182-195.

## Data analysis

- Examining raw tracks
- Relative statistics
- Fitting functional forms – one track at a time
- $\chi^2$  tests
- Developing automatic analysis