



# Use of Particle Imaging Velocimetry to measure fluid velocity

## ANALYSIS

Particle Imaging Velocimetry (PIV) is used to measure the velocity of the fluid and describe the flow patterns within the equipment being modelled.

## OVERVIEW

Water is used to simulate the liquid being modelled and is seeded with small particles (50 microns) which are of a neutral density to water. The fluid flow is illuminated by a very thin light sheet which is pulsed to produce a stroboscopic effect. Synchronised cameras are used to record the illuminated light plane. With the time between pulses known, and the distance across the image also known, the images can be analysed using velocity measurements and vector maps to show how the fluid is flowing within the image.

## OUTPUTS

This technique can be used on both liquids, gases and multiphase flows to produce the following outputs:

- Individual vector maps
- Time averaged vector maps
- Velocity measurements
- Standard deviation
- Streamlines
- Video animations of the fluid flow

