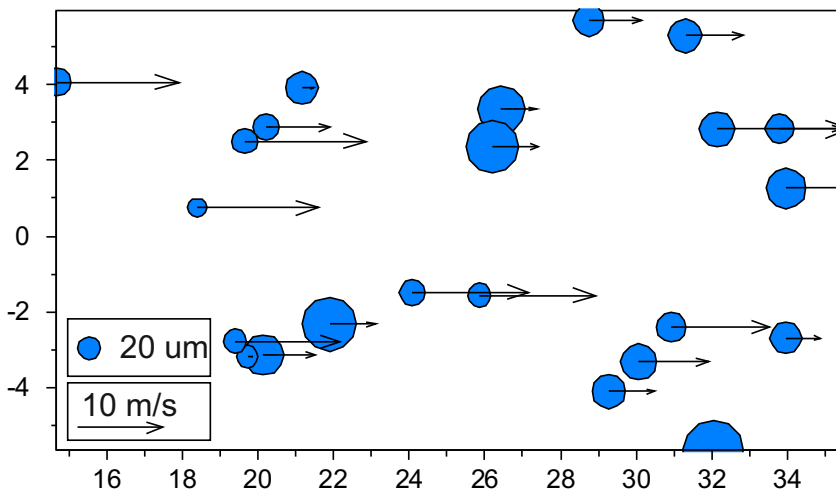
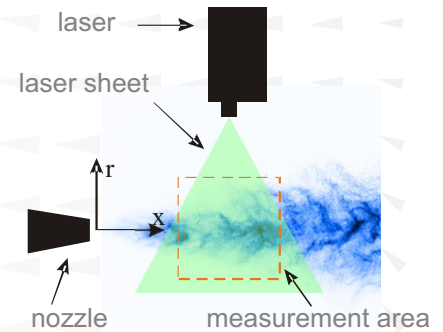


POLIS: aerosol flow measurement system

Interferometric Particle Imaging (IPI) technique is used for instantaneous measurements of droplet size in the flow plane. The size of spherical particle (bubble or droplet) is calculated from the interference pictures observed on defocused particle illuminated by laser sheet.



Droplet size, velocity and position distribution in the spray flow
(Results of IT SB RAS)



IPI technique features:

- › measurement of instantaneous position, size and velocity of spherical particles;
- › measured diameter dynamic range up to 1:20;
- › measured diameters of particles from 10 to 1000 μm ;
- › the size of measurement area from 10x10 to 50x50 mm (depends on parameters of equipment used);
- › the technique works in optically transparent media;
- › one camera is used for particle size and velocity measurements;
- › size and velocity measurements of droplets with changing refractive index (evaporating, reacting, etc.);
- › simple calibration of measurement system

Applications:

- › aerosol and bubble flow investigations;
- › liquid atomization processes;
- › reacting aerosol flows, including flows with combustion;
- › evaporation and condensation.

Measurement system components:

- › laser with lens for laser sheet formation;
- › CCD camera with lens;
- › interference pictures contraction module;
- › system calibration set;
- › ActualFlow software with IPI Kit;
- › PC;
- › instruction manual.
- › Option:
motorized traversing system

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