



Chair of Fluid Mechanics and Aerodynamics, Darmstadt University of Technology

Short Description:

The Chair of Fluid Mechanics and Aerodynamics was founded in its present form in 1997 at the Darmstadt University of Technology. The research topics include, apart from Aerodynamics and the study of drop and spray impact on walls and films, optical measurement technology. A large number of experimental facilities are available for this activities. One of the main research topics concerning optical measurement is the Phase-Doppler-Measurement Technique.

Main Fields of Research in Laser Measurement Techniques:

- Development of measurement techniques and instrumentation for single particle characterisation in backscatter by using time-shift technique and cross-section area difference method
- Optical measurement techniques for non-spherical particles
- Development of the multidimensional particle characterisation techniques as Global Phase-Doppler technique (GPD) and Interferometric Particle Imaging (IPI)
- Calculation of light scattering from single particles in an arbitrary shaped beam by using the Fourier Lorenz-Mie theory
- Use of femtosecond lasers for particle characterisation

- Application and development of Phase-Doppler systems
- Optical characterisation of single levitated droplets
- Concentration measurements using quantitative Mie scattering (quantitative light sheet, QLS) and Particle Image Velocimetry (PIV)
- Rainbow measurement technique for the particle sizing and temperature measurement

Short Courses for external audience:

- Phase Doppler Measurements in Ultra-Dense Sprays (2005)
- Optical Motion- and 3D-Measurement Technology (2002)
- Flow Measurement Technology in industrial Research (1999)

Contact:

Technische Universität Darmstadt
Fachgebiet Strömungslehre und
Aerodynamik
Petersenstr. 30
64287 Darmstadt



Tel.: +49 (0) 61 51 16-41 07
Fax: +49 (0) 61 51 16-47 54
Internet: www.sla.tu-darmstadt.de