

HITEC Lab

Title: Basics of flow visualisation by means of Particle Image Velocimetry (PIV)
Date: December 3/4(/5), 2014
Time: 9 a.m. – 4:30 p.m.
Location: Forschungszentrum Jülich ► IEK-6, Build. 16.5/09.1

Particle Image Velocimetry (PIV) allows the visualisation of a 2D or 3D flow field. PIV is used in a broad range of applications, e.g. from measuring flow velocity fields to the optimisation of the fluid dynamic conditions in experimental set-ups.

The 2 day hands-on training course will provide basic information on PIV and give the opportunity to set-up an own PIV experiment and to perform and evaluate PIV measurements. The lab is designed for PhD students with no or low experience in PIV application.

You will learn:

- A basic understanding of PIV principle and application range
- First basic steps in performing and evaluating a PIV measurement

Methods:

- 1) 1 day theoretical background, application fields and safety briefing
- 2) 1 day hands-on training: set-up of a PIV measurement system, execution of an experiment with PIV measurement, PIV data evaluation, estimation of measurement error

Number of Participants:

5 – 10 (depending on the number of participants, 1 or 2 practical days will be conducted with max. 5 participants at a time)

Responsible Scientists:

DI Alexander Belt, IEK-6/FZJ

DI Alexander Hundhausen, LRST/RWTH Aachen

DI Kathrin Trollmann, IEK-6/FZJ

Dr. Ernst-Arndt Reinecke, IEK-6/FZJ

The HITEC Labs are hands-on periods of practical training lasting 2 to 3 days, in which small groups of students from various institutes concentrate on one method that is applied in various fields. The aim of the HITEC Labs is to enable the PhD students to appreciate that a method originating from an unrelated field may also be applied in their own work. If students should discover that they require more intensive instruction in applying the method than can be imparted during the HITEC Lab, then they can make arrangements with PhD students at the institute in question to work at the institute for a limited period.

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Day 1: Theoretical Background

IEK-6, Bd. 16.5, Seminar Room

09:00 Welcome and introduction
PIV basics pt. 1
PIV basics pt. 2
12:00 – 13:00 *Lunch Break*
13:00 PIV application in IEK-6
PIV application in industry
Safety Briefing
Questions & Answers

Day 2: Hands-on Training

IEK-6, Bd. 09.1, Halle 4

09:00 – 16:30 Set-up of a PIV measurement system
Execution of PIV measurement
Evaluation of PIV data
Brainstorming: Error estimation
Feedback Session

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