Workshop on Particle Image Velocimetry in Car Industry

Towards Large Areas, TR-PIV, and Combination with Noise Measurements

Pininfarina Aerodynamic and Aeroacoustic Research Center, Grugliasco, November 17-18, 2005

Second Announcement

The Workshop has been postponed to 17th and 18th November 2005

General

PivNet2 is a Thematic Network funded by the European Community (EC). It is composed by 38 partners from industry, research organizations and universities, coming from 14 countries. The 13 industrial partners are either PIV end users, or PIV manufacturers. The main research fields covered in the network are aeronautics, automotive, turbo machinery and the naval field. PivNet2 started in May 2002 and will run for 4 years.
One of the main objectives of the PivNet2 network is to establish direct information exchange between end users in industry and PIV developers in universities and research institutes.
One of the activities planned in the framework of PivNet2 consists of a presentation and workshop about PIV in the car industry.

Presentation and Objectives

PIV measurements in automotive full scale wind tunnels, can be a fast and non intrusive way to measure various areas of interest of the flow field in the region around the vehicle. The main areas of application of PIV in car industry can be summarised in four topics: wake flow behind cars or components, flow under car under-bodies, flows in the engine compartment and/or passenger compartment and flow field measurements in engines. This workshop is going to address the first three of these topics.

Full scale Wind Tunnel for automotive tests is a challenging environment for PIV measurements. Typical difficulties arising by applying this measurement technique in this kind of facilities, involve the request of large fields of view with high spatial resolution, optical accessibility of some measurement areas, high speed of the flow, homogeneous seeding of the flow, etc. Besides, such industrial facilities are usually expensive which means that results have to be reached in very short time, despite of the mentioned difficulties. Obviously safety of the operators is a primary issue as well.

A further task of this workshop, is to address the question of how PIV measurements can be used to get more information about the fluctuating quantities of the flow field in those areas where noise sources are present, and how to establish a relationship between the statistics and the spectra of those quantities with the sound pressure level and the frequency spectrum of the noise sources.

In order to achieve results about the described tasks mainly four measurement techniques will be taken into consideration:

1. 3D PIV measurements of average values and fluctuations of the velocity field;
2. Time Resolved PIV measurements of the flow field;
3. Time averaged measurement of noise sources with acoustic mirror;
4. Time resolved measurement of noise sources with microphone array.

During the workshop will be given the chance to assist to demonstrations of applications of these techniques in the full scale Wind Tunnel of the Pininfarina Aero Center.

The aim of this workshop is to give the chance to the scientist operating in these fields of applied and fundamental research, and to the end users operating in industrial facilities, to meet together and exchange experiences, feedback, questions and requests.

Preliminary Program

Thursday November 17th

h	8.00	Registration
	8.20	Welcome and Presentation of the Workshop: "Using PIV to ask difficult questions about aeroacoustics: multipoint methodology for a multipoint technique."
	9.00	Keynote Lecture by Prof. William George, Chalmers University of Technology, Gothenburg (title to be defined)
	10.00	Coffee Break
	10.30	Contributions by PivNet2 partners
	13.00	Lunch
	15.0	Visit to the Pininfarina Wind Tunnel and demonstration of 3DPIV, TRPIV and Microphone Array on a full scale vehicle.
	18.30	End of the first Workshop day
	20.30	Social Dinner

Friday November 18th

h	8.00	Keynote Lecture by Dr. Klaus Ehrenfried, DLR Göttingen: "Application of PIV in Aeroacoustic Experiments."
	9.00	Contributions by the PivNet2 partners
	10.30	Coffee Break
	11.00	Contributions by the PivNet2 partners
	13.00	End of Workshop

Abstract Submission

All PivNet2 partners dealing with PIV technique in the automotive field are warmly invited to contribute to the workshop with a short (max 15 minutes) presentation of their current work.
Authors should submit a one page abstract in pdf or doc format to the workshop organizers by email. The abstracts will be distributed at the conference.

Registration

Registration to the workshop should be done by sending the Attached Registration form to the Organizing Secretariat. The number of participants will be limited to 40, with a priority to PivNet2 partners and to technicians of the automotive companies.
Note that the workshop will be rescheduled if a sufficient number of participants will not be reached.
The registration fee for the two days workshop, which includes bus transportation from the hotels to the Pininfarina Aero Center, lunch and refreshments, a dinner on Thursday evening and a CDROM of the proceedings is 150 € for participants not being PivNet2 members.
Hotel reservation should be done by sending the attached Hotel Registration Form to the Organizing Secretariat.

Deadline

October 31st, 2005 Deadline for abstracts and registration

Organizing Committee

A. Cogotti, Pininfarina Aero Center
email: cogotti@pininfarina.it
G. Carlino, Pininfarina Aero Center
email: carlino@pininfarina.it

Organizing Secretariat

M. Rosa, Pininfarina Aero Center
Via Ferrero 1
Grugliasco (To), Italy
email: arc@pininfarina.it
Phone: +39 011 7091276
Fax: +39 011 7091421

How to Reach Us

See http://www.pininfarina.it/arc

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Grugliasco (To), Italy, November 17-18, 2005

REGISTRATION FORM

To be sent to

Magda Rosa
Pininfarina Aero Center
Via Ferrero 1
10095 Grugliasco (To)

Tel. +39 011 7091276
Fax +39 011 7091421
email: arc@pininfarina.it

Before October 31st 2005

Name _____

Surname _____

Title _____

Organisation _____

Address _____

_____

Phone _____

Fax _____

email _____

Cross one or more entries:

- ☐ I am a PivNet2 partner
- ☐ I am NOT a PivNet2 partner
- ☐ I would like to present a contribution

Paper Title:

_____

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Grugliasco (To), Italy, November 17-18, 2005

HOTEL RESERVATION FORM

To be sent to

Magda Rosa
Pininfarina Aero Center
Via Ferrero 1
10095 Grugliasco (To)

Tel. +39 011 7091276
Fax +39 011 7091421
email: arc@pininfarina.it

Before October 31st 2005

A number of rooms have been reserved for the nights from November 16th to November 17th, at the following hotels:

- Hotel Concord, Via Lagrange, 47 - Torino
  Price per night: 123 € (breakfast included).

- Hotel Gran Mogol Best Western, Via Guarini, 2 – Torino
  Price per night: 100 € (breakfast included).

Name, Surname _____

Organisation _____

Hotel Choice _____

Arrival Date _____

Departure Date _____

Number of Nights _____