

Turbulence and Flow Control Research Group Seminar Series CITY UNIVERSITY LONDON



“Recent Developments of Particle Image Velocimetry and Applications to Aerospace Research”

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ABSTRACT

The talk presents the current status of PIV towards a powerful and versatile measurement technique to extract detailed information during aerodynamic experiments. The advent of high-speed systems enables nowadays the study of dynamical phenomena and turbulence with unprecedented clarity and completeness. Stereoscopic, tomographic and volumetric techniques pave the way towards three-dimensional inspection of aerodynamic flow problems. Physics-based data reduction methods allow extracting the flow-field pressure from PIV measurements, of paramount importance to study aero-acoustic and aero-elastic regimes. The applications to relevant problems include, shock wave boundary layer interactions, launcher after-body flows, non-intrusive pressure and load determination on airfoils and rotors, unsteady three-dimensional behaviour of jets and wakes. A wide variety of scales and regimes are covered, from flying micro-aerial vehicles to wind turbines rotor models, from low speed flows in water to the hypersonic regime.

SPEAKER'S BIO

Aerospace Engineering degree from University of Naples (cum laude, 1996) and Ph.D. at the von Karman Institute (2000 Theodor von Karman prize). Chair of Aerodynamics and head the AWEP department (Aerodynamics, Wind Energy, Flight Performance and propulsion). Author of more than 200 publications and delivered more than 20 keynote lectures worldwide, he acts as editorial board member of Measurement Science and Technology and Experiments in Fluids journals, along with memberships of scientific board of international conferences in the field of experimental fluid mechanics.

VENUE, DATE & TIME

City University London (click on figures for further details).

Room: C143

Building: Tait

Date: 30th October, 2015

Time: 9:30

ORGANISERS

Prof. Alfredo Pinelli, Prof. Chris Atkin,
Dr Marco Placidi, Dr Jafar Alzaili,
Dr Mohammad Omidyeganeh, Prof. Abdulnaser Saylor

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