SEMINAR
16:30 of the 4th of May 2022
Room N13 (Dept. of Engineering, UNIROMA3)

Status and developments of particle image velocimetry and its contribution to sport aerodynamics

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The recent developments of the Particle Image Velocimetry technique (PIV) into a three-dimensional flow diagnostic tool allows nowadays its application in time-resolved mode for air flows at moderate values of the Reynolds number. This advance is mainly due to the joint progress of CMOS imagers and diode-pumped solid-state lasers operating at rates of several kilohertz. A more recent development is that of seeding particles that allow Large-Scale (at level of several m^2) PIV.

As a result, a significant step forward in the detailed study of the complex and turbulent flows is being taken with augmented observation capabilities. Novel architecture for the measurement of the aerodynamics in real-life conditions allow non-intrusive study of the pressure field and open unforeseen perspectives in the area of sport aerodynamics.

The seminar will cover some fundamental aspects of 3D-PIV and time-resolved data reduction techniques aiming at pressure field analysis. Furthermore, concepts like robotic PIV and the Ring-of-Fire are introduced alongside applications to the aerodynamics of speed-sports like cycling and skating.

The presentation will be given in English, with the possibility of discussion in Italian when required.
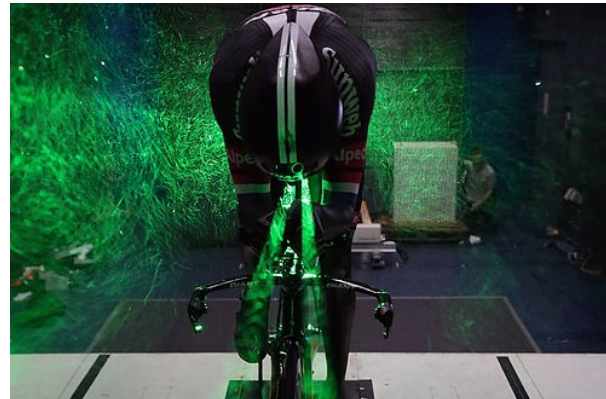
SEMINAR ON-LINE AND IN PRESENCE (contact roberto.camussi@uniroma3.it)

If you wish to attend the seminar in presence, please reserve your place sending an email to: roberto.camussi@uniroma3.it

The seminar will be available online at the following link:
https://teams.microsoft.com/l/meetup-join/19%3ameeting_YTk4ODFmMWMtY2I2MS00NGI3LWFjNzgtZDRkMGEyZDUxODRl%40thread.v2/0?context=%7b%22Tid%22%3a%22ffb4df68-f464-458c-a546-00fb3af66f6a%22%2c%22Oid%22%3a%229beb68ed-45f7-4e49-a1a9-2289ac021277%22%7d