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Giorgio Moscato

ABOUT ME

I'm a Postdoctoral Researcher in experimental fluid dynamics, mainly focused on microfluidics, multiphase jets, PIV (Particle Image Velocimetry) and infrared techniques. I handle all phases of projects, from conceptual design to data acquisition, processing, and interpretation.
In addition, I work as a freelancer in the Italian wind energy sector, specialized in wind resource assessments, analysis of land constraints, and the preparation of documents for the authorization process.
I'm a fluid dynamic lover and a truly supporter of the green energy transition!

WORK EXPERIENCE

05/2023
POSTDOCTORAL RESEARCH (ASSEGNISTA) SAPIENZA UNIVERSITY OF ROME

Experimental activities focused on:
- microfluidic devices and heat transfer efficiency, microPIV, infrared measurements
- hydrodynamic investigations for micro-particle trapping using Coanda jets
- multiphase plunging jets
- vertical axis wind turbine

Italy
WIND ENERGY ENGINEER SR INTERNATIONAL

Industrial research project on the development of an offshore LIDAR buoy for wind measurement, wind farm layout and assessment (WindSim and WindFarm), wind analyst (Windographer), GIS analyst, italian constraint analyst, VIA documents, site suitability

05/2018 – 09/2019
INTERNSHIP AT INM (INSTITUTE OF MARINE ENGINEERING) CNR (NATIONAL COUNCIL OF RESEARCH)

Use of temperature sensitive paint (TSP) for the measurement of skin friction on bluff bodies inside a water flow, in the context of the research program RitMare.

EDUCATION AND TRAINING

2019 – 2022
PHD IN THEORETICAL AND APPLIED MECHANICS XXXV CICLO Sapienza University of Rome

PhD project focused on the study of multiphase flows. Strictly speaking, water plunging jets issuing horizontally in air from orifices of different geometry are investigated. The interaction between the liquid phase and air bubbles is studied through the use of time-resolved Particle Image Velocimetry technique (PIV) and a dedicated digital image processing algorithm.
Additional tasks:
- teaching support activity for the courses "Experimental Fluid Mechanics" and "Experimental Aerodynamics" in the context of the Master Degree of Energy Engineering and Aerospace/Aeronautical Engineering

2019

PROFESSIONAL QUALIFICATION'S CERTIFICATE FOR INDUSTRIAL ENGINEERS Consiglio Nazionale degli Ingegneri - Università La Sapienza

2016 – 01/2019 Rome, Italy

MASTER'S DEGREE IN ENERGY ENGINEERING Sapienza Università di Roma

Advanced thermodynamics, electrical machines/generators and grid, energy technologies (renewables, steam etc.), heating and cooling system, passive systems for sustainable buildings, electrical markets.

Final grade 110/110 with honors |

Thesis Characterization of the fluid dynamic field over a NACA 0015 profile using the Temperature Sensitive Paint technique

BACHELOR'S DEGREE IN ENERGY ENGINEERING Sapienza Università di Roma

Thesis Sedimentation Chambers' design using CFD Fluent-Ansys

Roma, Italy

HIGH SCHOOL GRADUATION Liceo scientifico S. Cannizzaro

Final grade 100/100

LANGUAGE SKILLS

Mother tongue(s): **ITALIAN**

Other language(s):

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken production	Spoken interaction	
ENGLISH	B2	C1	B2	B2	B2

Levels: A1 and A2: Basic user; B1 and B2: Independent user; C1 and C2: Proficient user

ADDITIONAL INFORMATION

PUBLICATIONS

A comparative study of circular and rectangular bended plunging jets – 2023

In the present work we study the topology, mixing properties, turbulence quantities, dependence on the outlet geometry of a sharp-edged orifice plunging jet which first issues horizontally in air and then plunges in a water pool.

Experimental Thermal and Fluid Science

Role of density ratio on particle dispersion in a turbulent jet – 2023

The behavior of dispersed particles in a turbulent round jet is experimentally investigated. The role of particle-to-fluid density ratio is analyzed by inspecting particle velocity fields and preferential concentration at four different ratios, from 0.7 to 19.3. The jet near-field region, i.e., up to X/D=11, is analyzed and compared to the unladen case.

Improving performances of biomimetic wings with leading-edge tubercles – 2022

The present study aims investigating experimentally wing/blade geometries in which the leading edge is modified by the presence of artificial bumps, following examples in nature (“biomimetics”).

Experiments in Fluids

Plunging jets from orifices of different geometry – 2021

Conference paper published for the 14th International Symposium on Particle Image Velocimetry.

G. Moscato, G.P. Romano

DRIVING LICENCE

Driving Licence: B

HONOURS AND AWARDS

2023
Funding within the Progetti di Avvio alla Ricerca 2023 – Università Sapienza di Roma I have secured funding within the scope of 'Research Starter Projects' of Sapienza University of Rome for my project titled 'Analysis of the behavior of a two-phase flow within microfluidic cells through a novel experimental approach: micro smartPIV".

10/2019
Premio di Laurea Giulio Guj – Università degli studi di Roma 3, associazione AIVELA, Univeristà La Sapienza, CNR I won the prize in honor of Prof. Giulio Guj for my master thesis "Characterization of the fluid dynamic field over a NACA 0015 profile using the Temperature Sensitive Paint technique"

CONFERENCES AND SEMINARS

2023 – Padova
8th Micro and Nano Flows Conference Author of the accepted work "On the Coupling between Heat and Momentum Transfer in a micro U bend" (Mohamed J., Moscato G., Romano G.P.)

2023 – San Diego, California
15th Internationa Symposium on Particle Image Velocimetry - ISPIV2023 Oral presentation of the work "Experimental investigation on two-phase plunging jets" (Moscato G., Romano G.P.)

2023 – Poitiers, France
Fifth international conference in numerical and experimental aerodynamics of, road vehicles and trains (Aerovehicles 5) Author of the accepted work "Ahmed Body Wake and related Performances under Unsteady Flow Conditions" (Moscato G., Romano G.P.)

2023 – Valencia
18th European Turbulence Conference Author of the accepted work "Solid Particle Dispersion in a Turbulent Jet" (Capone A., Moscato G., Romano G.P.)

2023
40th IAHR World Congress Author of the submitted work "Flow field in the T junction between the penstock and the surge tank: an experimental study" (Stradiotti G., Pisaturo G., Moscato G., Righetti M.)

13/09/2022 – 16/09/2022 – Athens
14th European Fluid Mechanics Conference-EFMC14 Oral presentation of the work "Experimental study of circular and rectangular water plunging jets" (Moscato G., Romano G.P.)

Link https://www.erasmus.gr/microsites/1240/abstract-book

01/08/2021 – 05/08/2021 – Online
14th InternationalSymposiumonParticleImageVelocimetry–ISPIV2021 Oral presentation of the work "Plunging jets from orifices of different geometries". (Moscato G., Romano G.P.)

JOB-RELATED SKILLS

Software

Great knowledge of Microsoft Office, MATLAB, Simulink, WindSim, WindFarm, Windographer, QGIS, Global Mapper, AutoCAD

COMMUNICATION AND INTERPERSONAL SKILLS

Communication and interpersonal skills Ability of interface with people in a positive way. Will to create or be part of a team, acquired during my work at the university, collaborating with SR International colleagues and having played music in several bands.