

Universidad Carlos III de Madrid (www.uc3m.es) invites to fill the following **post-doctoral position**:

Ref. NEXTFLOW-PostDoc1: Enhancing flow measurements with data-driven techniques.

Description and objectives:

Flow sensing and control heavily rely on state-of-art experimental/computational fluid mechanics to characterize and model the flow behavior. In experiments it is difficult to achieve a complete flow description, since experimental techniques normally provide only a partial view of the flow properties. Planar and volumetric velocimetry techniques are offering interesting opportunity to aim towards a complete flow characterization.

The goal of the research is to enhance the reach of current flow diagnostics techniques to achieve a 4D-4C flow description (velocity + pressure in space and time) from non-time resolved velocity field measurements, and improve the spatial resolution using data-driven techniques. The postdoc will be responsible for conducting the following research activities: investigating data-driven methods to exploit the advantages of combined use of different measurement techniques; developing novel data-driven concepts to achieve a step change in spatial resolution and accuracy of velocimetry techniques. Data-mining and artificial-intelligence techniques will be the cornerstones to reach these objectives. The research activities will be both experimental and numerical.

The successful candidate will join the Experimental Aerodynamics and Propulsion Laboratory (<https://aero.uc3m.es/EAPlab.html>), within the Aero Research Group (<http://aero.uc3m.es/research.html>) of UC3M. He/she will work in the group of Dr. Stefano Discetti within the recently granted **ERC Starting Grant project NEXTFLOW** (Next-generation flow diagnostics for control) and will participate to the supervision of scientific activities of the team.

Desired background and skills:

- Outstanding academic record.
- PhD holder (or close to finish PhD studies) in Aerospace Engineering, Fluid Dynamics, Applied Mathematics & Statistics, Scientific Computing, Computer Science. Also, candidates with tracks in other disciplines but outstanding academic record are invited to apply.
- International experience; team-working, communications and leadership skills.
- Critical thinking, and ability to cope with innovation and interdisciplinarity.

What we offer:

- Annual gross salary 31000-35000€ range, depending on experience.
- Total duration: up to 3 years, through renewable 1-year contracts.
- Become part of a young, dynamic, highly qualified, collaborative team.
- Flexible working environment and schedule.
- Opportunity to travel to international conferences to present research activities.
- Opportunity to supervise the activities of MSc and PhD students.
- Health coverage under the National Health System.

How to apply:

Interested candidates must send their applications to sdiscett@ing.uc3m.es indicating in the e-mail subject **NEXTFLOW-PostDoc1**, including in a single pdf file:

- CV (max. 6 pages), including relevant professional experience and knowledge.
- Highlights of the 3 main research papers.
- A motivation letter of experience, interests, and research goals (max. 2 pages).
- 2 professional or academics recommendation letters.

Submission of applications is due by **October 15th, 2020** (though early applications are strongly encouraged, and later applications will be considered until the vacancy is filled). The contract will begin in January 2021, though earlier/later start date can be agreed.