Post-doc position 24 months
International mobility
University of Mons – UMONS

The University of Mons - UMONS, as part of a Marie Curie action of the European Union, is seeking highly motivated post-doctoral researchers for interdisciplinary projects. We are currently looking for a dedicated PhD in engineering with a strong background in computational fluid dynamics to join our Fluids-Machines laboratory. This research opportunity focuses on the numerical prediction of urban flows, with applications to wind energy and pollutant dispersion. The selected candidate will have the opportunity to submit a proposal for a prestigious EU funding scheme, which supports mobility, career development, and training in Europe and beyond. This fellowship offers a 24-month, highly competitive salary and provides research/training funds.

Applicants

- any nationality, no age restriction, fluent in English
- must hold a PhD (or has at least four years of full-time equivalent research experience) in engineering at the call deadline (5th September 2023)
- cannot have resided or carried out her/his main activity in Belgium for more than 12 months in the three years before the call deadline

Research project and research groups

In the field of wind energy harvesting and pollutant dispersion in the built environment, it is crucial to implement numerical methods with predictive capabilities.

The primary objective of the proposed project is to enhance our understanding of how numerical simulations of atmospheric mesoscale flows can improve microscale flow modeling. This interdisciplinary project involves two main aspects:

1. High-fidelity, massively parallel large eddy simulations of turbulent flows at both micro and meso scales. Key focus areas include modeling realistic turbulence inflow conditions, evaluating the influence of geometrical resolution on the environment, considering thermal effects, improving computational efficiency, and enhancing wall modeling.
2. Collaborative research with Ecole centrale de Nantes (ECN, France) to conduct experimental validations of the developed models through comparison with physical modelling in the LHEEA's atmospheric wind tunnel. ECN also brings extensive expertise in mesoscale flow modeling of urban areas enabling cross-validation of different numerical approaches. A six-month scientific stay at ECN is planned during the two-year research period.

The project will be supervised by Prof. Laurent Bricteux and Dr. Stéphanie Zeoli at the University of Mons, along with Prof. Isabelle Calmet and Dr. Laurent Perret at Ecole Centrale de Nantes.

How to Apply

To express your interest, please submit your application to stephanie.zeoli@umons.ac.be before July 10th, 2023. For more information about this call, please visit the website at https://cometowallonia.eu/. We look forward to receiving your application and welcoming a highly motivated researcher to our interdisciplinary team at the University of Mons - UMONS. Join us in advancing the field of computational fluid dynamics and making a significant impact on urban flows, wind energy, and pollutant dispersion research.

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