



PhD grant

(Aid for pre-doctoral contracts for training of doctors – FPI 2021 call)

<https://www.ucm.es/ct52-21> Reference: PID2020-115321RB-I00

Applications are invited for a PhD fully funded by the Spanish Government (Ministry of Science and Innovation). This **4-year** position will be developed at the **Department of Earth Physics and Astrophysics** (Physics Faculty) of the **University Complutense of Madrid (UCM)** and is devoted to train the student until the obtention of the PhD degree. The position is linked to the recently funded research project **LATMOS-i** (Land-ATMOSphere interactions in a changing environment: How do they impact on atmospheric-boundary-layer processes at the meso, sub-meso and local scales in mountainous and coastal areas? Ref **PID2020-115321RB-I00**). The PhD will be supervised by [Prof. Carlos Yagüe](#) and [Dr. Carlos Román-Cascón](#).

About the project... LATMOS-i aims at better understanding thermally-driven flows (both mountain and sea breezes) and their interactions with processes of different scales, including the surface turbulence and the energy exchanges between the soil-vegetation-atmosphere system. The study will be mainly carried out in heterogeneous and/or complex terrain, where many scientific questions are still open. We plan to build and exploit different high-quality databases at different observational sites in mountain and coastal areas. Additionally, we will perform simulations with state-of-the-art mesoscale models to achieve a better understanding of the influence of contrasting surface conditions (including land use, soil moisture, and possible changes in the context of the climate change) on the different phenomena and their interactions.

PhD tasks... Processing, analysis, and interpretation of observational data from multiple instruments and sites. Development of ideas to understand the interaction between the different analysed processes. To prepare and carry out simulations with numerical weather prediction models (such as WRF). Participation in field work when needed. Presentation of results in national and international conferences. Publication of results in scientific journals. And, hopefully, PhD defence at the end of the grant!

Requirements... Applicants may be those who are enrolled or admitted to a doctoral program at the present date, or those who, not being enrolled or admitted to a doctoral program now, will be in position to be admitted at the date of formalization of the contract (around summer 2022). **Desired:** A good background in Meteorology (Master level) or related sciences, knowledge of atmospheric boundary layer processes. Experience with scientific computing tools (Matlab, Python, or similar). Ability to develop own ideas and to work on a team, as well to be open for possible scientific stays (which can also be funded by the grant).

How to apply... The applicant should follow all the steps indicated at the webpage of the [Spanish Research Agency](#). More information can be also found at the [UCM webpage](#).

The submission of applications is open from 28 Oct 2021 **to 11 Nov 2021 at 14:00 CEST**.

More information about the project, the PhD associated tasks, conditions, and about the application procedure can be demanded by email to Carlos Yagüe (carlos@ucm.es) and Carlos Román-Cascón (carlosromancascon@ucm.es). Please, see this [webpage](#) for frequently asked questions.