PhD Opportunity at UC3M

UC3M Research group on Airborne Wind Energy is looking for an **enthusiastic engineer willing to develop a PhD**. in the area of Airborne Wind Energy (AWE). The candidate will work on the new AWE machine prototype that **UC3M** and the Spanish company **CT Ingenieros** are currently developing that could lead to be the first yo-yo AWE Spanish machine.

From left to right, AWE machines from KitePower, Skysails, EnerKite, Makani and AmpyxPower.

Description:

- **Ideal starting date:** April-May 2023.
- **Duration:** 3 years, with possibility of one-year extension. Opportunity to be hired by the company after the PhD.
- **Gross annual salary range:** 21,000 € per year, during 3 years, hired by the university UC3M.
- **Expected tasks:** The candidate will perform research on Airborne Wind Energy, with a heavy focus on experimental activities. Among other activities, the candidate will work on the design of a control system boarded on the kite, will assist on the development of our current prototypes and simulation environments and will participate in several flight-testing campaigns. Furthermore, the candidate could contribute to developing the ground station where the mechanical to electrical conversion happens, including generator, power converter and control cabinet.

Application:

Please, send the following documents to gonzalo.sanchez@uc3m.es and dsmartin@ing.uc3m.es:

- Motivation letter
- Short CV (maximum 4 pages)
- Academic records
- (Optional) 1 recommendation letter

Requirements:

- Ms. in Aerospace Engineering, Industrial Engineering, Mechatronics, Automation or related areas. Students close to finishing the Ms can also apply.
- Excellent academic record.
- Class B driving licence (mandatory).
- Excellent English speaking and writing skills.

Desirable skills:

- Problem-solving skills.
- Critical, innovative and interdisciplinary thinking.
- Team-building and team-working skills.
- Knowledge of Python, Matlab, C, C++ programming languages
- Basic knowledge of 3D printing, mechanical and electronic design.
- Skilled person in assemblies, field and laboratory tests.

Background:

Airborne wind energy systems (AWES) are technologies which can harvest wind energy using flying wings attached to a ground station by one or more tethers. AWES are expected to complement traditional wind turbines, as they can access the stronger and steadier high-altitude winds which are unreachable to them. The field has experienced a significant development during the last decade, fuelled by the need of affordable and effective renewable technologies to face the climate and energy crisis and the emergence of several start-ups and their demonstrators by varying degrees of technology readiness.

UC3M activities on AWES formally started in 2015, with one PhD thesis defended in 2021 and two others in progress. During this time a small-scale ground-actuated demonstrator has been developed, and at the moment the team is focused on achieving autonomous flight, design the energy generation system and upscale the design to produce a full-scale demonstrator. More information can be found at aero.uc3m.es/airborne-wind-energy