**Novel fluid-solid interaction techniques for offshore wind turbines**

**Overview**

The European Green Deal commits to increasing Europe's offshore wind generation capacity from the current 12 GW level to at least 60 GW by 2030 and 300 GW by 2050. Achieving this requires a greater understanding of the long-term structural behaviour of offshore wind turbines. This project will contribute unique insights into these systems by developing novel fluid-solid interaction simulation techniques for floating offshore wind turbines. The proposed developments aim to reduce the lifetime cost and risk of next-generation, floating, deepwater solutions wind technologies while developing new numerical tools for their design and operation.

**The position**

We are looking for one candidate with a passion for simulation, modelling and programming. The project will focus on developing fluid-solid interaction simulation techniques for offshore mooring and rope systems based on the finite volume and finite element numerical techniques. The successful candidate is expected to have a first (or upper second) class degree in engineering, science, mathematics or computer science. The project is funded for four years. The base annual stipend is €18,500, with the option of more per annum via teaching assistance and exam invigilation. PhD fees of the candidate will be paid for as well. The advertised PhD position will be based in the vibrant UCD Energy Institute ([energyinstitute.ucd.ie](https://energyinstitute.ucd.ie/)) with over 100 PhDs and Postdocs working on ambitious renewable energy targets. The project will also work closely with the UCD Centre for Mechanics ([www.ucd.ie/cmechanics](https://www.ucd.ie/cmechanics)), the Bekaert University Technology Centre at UCD ([www.ucd.ie/bekaert](http://www.ucd.ie/bekaert)), and the UCD Dynamical Systems and Risk Laboratory. The project will be supervised by Assoc. Profs Philip Cardiff ([https://scholar.google.com/citations?user=1aV2HGcAAAAJ&hl=en](https://www.findaphd.com/common/clickCount.aspx?theid=143667&type=184&DID=370&url=https%3a%2f%2fscholar.google.com%2fcitations%3fuser%3d1aV2HGcAAAAJ%26hl%3den); [https://people.ucd.ie/philip.cardiff](https://www.findaphd.com/common/clickCount.aspx?theid=143667&type=184&DID=370&url=https%3a%2f%2fpeople.ucd.ie%2fphilip.cardiff)) and Vikram Pakrashi ([https://scholar.google.com/citations?user=tcHb7y8AAAAJ&hl=en&oi=ao](https://www.findaphd.com/common/clickCount.aspx?theid=143667&type=184&DID=370&url=https%3a%2f%2fscholar.google.com%2fcitations%3fuser%3dtcHb7y8AAAAJ%26hl%3den%26oi%3dao); [https://people.ucd.ie/vikram.pakrashi](https://www.findaphd.com/common/clickCount.aspx?theid=143667&type=184&DID=370&url=https%3a%2f%2fpeople.ucd.ie%2fvikram.pakrashi)).

**The location**

Ireland’s largest university, University College Dublin (www.ucd.ie), is ranked within the top 1% of higher education institutions worldwide. The university is located on a 330-acre parkland campus in the south Dublin suburbs (with three lakes!). Dublin is a lively European capital renowned for its nightlife and bustling technology industry.

**Applications**

To apply, please send the following to philip.cardiff@ucd.ie:

1. A curriculum vitae (max. two pages) outlining your educational qualifications, employment history and research interests. It should include the names and contact details of at least two referees.
2. A cover letter highlighting why you should be considered for the PhD position taking into account the required skills (above).

Applications will be monitored daily, and candidates will be notified via email if they have successfully obtained an interview (e.g. by video call) or have not been deemed suitable for the position. **Ideally, the applicant can start in September 2022 or January 2023**; however, the project can wait for particularly passionate well-suited candidates.