

PhD Studentship: Data-driven Multi-Disciplinary Design and Optimization of Smart Morphing Aircraft

Project description

The aviation industry produces approximately 2.5% of human-induced CO₂ emission. The future of the aviation industry is moving towards zero-emission flight, making it imperative to move towards sustainable and environmentally friendly aircraft. The 'morphing wing' concept presents great potential to reduce fuel costs, meet environmental requirements and deliver on the decarbonization strategy in the aviation industry. High fidelity computational tools are necessary to investigate such revolutionary concepts. However, the industrial state-of-art in high fidelity tools requires significant computational resources and is currently still restricted to a narrow range of applications. The purpose of this project is to develop a data-driven design approach such as deep learning for nonlinear aeroelastic modelling, and integrate it into an intelligent multi-disciplinary optimisation framework, providing a step change in configuration, production lead time and performance of smart morphing aircraft. The ideal candidate will have a good understanding of aircraft design principles as well as a strong interest in artificial intelligence.

Funding

DMU is offering a fully-funded 3-year PhD scholarship for this work, **commencing on 1st October 2021**. The stipend is pegged to the UKRI rate, currently at £15,609 per annum. **Lead Supervisor** is Dr Weigang Yao (weigang.yao@dmu.ac.uk).

Applicants must:

- Possess a UK Honours degree with at least an upper second class (or overseas equivalent), a Masters Degree or an academic or professional qualification plus experience in their sector or industry.
- Demonstrate competence in the use of the English language. Please see section 5b [here](#) for further details on meeting our English language entry criteria.

How to apply

Please go to the [scholarships page](#) which outlines the 2-stage process for applying for these scholarships.