

Department of Aeronautics

**PhD Studentship**

**Beyond Self-similarity in Turbulence**

**(REF: AE0054)**

**Supervisor:** Dr Kostas Steiros
**Application deadline:** 23rd October 2024
**Start date:** as soon as possible

Richard Feynman famously quoted ’turbulence is the most important unsolved problem of classical physics’. Understanding and modelling turbulent flow physics will unlock a vast potential for optimising many applications of the energy and transportation sectors. A century of research has managed to model two extreme and polar-opposite turbulence regimes: when turbulence is highly or when it is lowly strained. The aim of this project is to physically model the unexplored intermediate strain turbulence regime, which is the most important for engineering and environmental applications. The project will build on previous work conducted at Imperial College London and will combine experiments in the state-of-the-art wind tunnel facilities of the Aeronautics Department, with theoretical and machine learning tools.

This PhD project is funded by the European Research Council, under the ERC grant ‘ONSET’.

The ideal applicant is a graduate in engineering or any closely related discipline, with a first class degree. Upon completion of this work, the student can expect to be an expert in aerodynamics and turbulent flows, and to have developed skills in experimental fluid mechanics, statistics, data processing, machine learning, and mathematical modelling.

The position will remain open until a suitable candidate is identified. Interested applicants are invited to send a preliminary application, as soon as possible, to k.steiros@imperial.ac.uk highlighting how they meet the selection criteria and to include a CV, university transcripts and, optionally, a piece of written work (e.g., from a previous project report).

**Funding**

This studentship is available to students eligible for both home and overseas fees.

The studentship is for 3.5 years and will provide full coverage of tuition fees and an annual tax-free stipend of £20,622.

Information on fee status can be found at[**https://www.imperial.ac.uk/study/pg/fees-and-funding/tuition-fees/fee-status/**](https://www.imperial.ac.uk/study/pg/fees-and-funding/tuition-fees/fee-status/). To learn more about Imperial College, please go to [www.imperial.ac.uk/study/pg](http://www.imperial.ac.uk/study/pg).

To apply for these fully-funded studentships please go to: <https://www.imperial.ac.uk/study/apply/postgraduate-doctoral/application-process/> and indicate in your application the reference code for the project. Please address your application to Department of Aeronautics.

For further inquiries, contact the project lead Dr. Kostas Steiros (k.steiros@imperial.ac.uk).

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