

PhD studentship (Full-time)

Institution	Xi'an Jiaotong-Liverpool University, China
School	<i>School of Mathematics and Physics</i>
Supervisors	Principal supervisor: <i>Professor Arthur Moraes (XJTLU)</i> Co-supervisor: <i>Professor Mattheus (Thijs) Kouwenhoven (XJTLU)</i> Co-supervisor: <i>Professor Jan Kretzschmar (UoL)</i>
Application Deadline	Open until the position is filled
Funding Availability	Funded PhD project (world-wide students)
Project Title	Multiple Partonic Interactions at the LHC: enabling the discovery of new physics
Contact	Please email Arthur.Moraes@xjtlu.edu.cn with a subject line of the PhD project title

Requirements:

The candidate should have a first class or upper second class honours degree, or a master's degree (or equivalent qualification), in Physics (preferably Particle Physics or Computational Physics). Evidence of good spoken and written English is essential. The candidate should have an IELTS score of **6.5 or above**, if the first language is not English. This position is open to all qualified candidates irrespective of nationality.

Degree:

The student will be awarded a PhD degree from the University of Liverpool (UK) upon successful completion of the program.

Funding:

The PhD studentship is available for three years subject to satisfactory progress by the student. The award covers tuition fees for three years (currently equivalent to RMB 80,000 per annum) and provides a monthly stipend of 5,000 RMB as a contribution to living expenses. It also provides up to RMB 16,500 to allow participation at international conferences during the period of the award. It is a condition of the award that holders of XJTLU PhD scholarships carry out 300-500 hours of teaching assistance work per year. The scholarship holder is expected to carry out the major part of his or her research at XJTLU in Suzhou, China. However, he or she is eligible for a research study visit to the University of Liverpool of up to six months, if this is required by the project.

Project Description:

Searches for new physics with data from the Large Hadron Collider (LHC) have not yet produced any conclusive evidence indicating the existence of interactions beyond the Standard Model. Nevertheless, these searches reveal a challenging and complex structure of the underlying interactions produced alongside the candidate processes of interest. Modern phenomenology models, in particular those that implement the mechanism of multiple partonic interaction (MPI), have proven to be indispensable tools in the study of LHC physics. The effectiveness of these models depends on a continuous development and tuning of model parameters based on the observed data. Using state-of-the-art techniques of Monte Carlo simulation and Neural Networks this proposal has the goal to develop and calibrate simulation models to describe recent measurements from the LHC experiments. This project also aims to provide predictions to guide the search for new physics at the LHC and in future particle colliders.

For more information about doctoral scholarship and PhD programme at Xi'an Jiaotong-Liverpool University (XJTLU): Please visit

<https://www.xjtlu.edu.cn/en/admissions/global/entry-requirements/>

<https://www.xjtlu.edu.cn/en/admissions/global/fees-and-scholarship>

How to Apply:

Interested applicants are advised to email.....@xjtlu.edu.cn (XJTLU principal supervisor's email address) the following documents for initial review and assessment (please put the project title in the subject line).

- CV
- Two reference letters with company/university letterhead
- Personal statement outlining your interest in the position
- Proof of English language proficiency (an IELTS score of 6.5 or above)
- Verified school transcripts in both Chinese and English (for international students, only the English version is required)
- Verified certificates of education qualifications in both Chinese and English (for international students, only the English version is required)
- PDF copy of Master Degree dissertation (or an equivalent writing sample) and examiners reports available

Informal enquiries may be addressed to Professor Arthur Moraes (Arthur.Moraes@xjtlu.edu.cn), whose personal profile is linked below, <https://www.xjtlu.edu.cn/en/study/departments/school-of-mathematics-and-physics/physics/department-staff/academic-staff/staff/arthur-moraes>