PhD studentship (Full-time)

Institution	Xi'an Jiaotong-Liverpool University, China
Department	Department of …Pure Mathematics……………………..
Supervisors	Principal supervisor: Dr…Luca Demangos… (XJTLU, Department of Pure Mathematics) Co-supervisor: Professor…Florian Breuer…...(University of Newcastle - Australia, Department of Mathematics) Co-supervisor: Dr…Michael Mertens…...(UoL, Department of Mathematics)
Application Deadline	Open until the position is filled
Funding Availability	Funded PhD project (world-wide students)
Project Title	Geometry of A-motives
Contact	Please email…...Luca.Demangos@xjtlu.edu.cn (XJTLU principal supervisor's email address) 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 …Mathematics………………………
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 three months, if this is required by the project.

Project Description:

A-motives are non-commutative algebras with no relation at all with fields and the task of describing finite extensions between them, producing a related theory of divisors and a general cohomology is a very open problem. Achieving this task would integrate with the already known results into a complete categorical picture of Function Field Arithmetic, representing as well a very fruitful direction of research for a good PhD student, even in prosecution of his career after his/her thesis defense.

Some interesting gaps to fill (during the PhD, but also in subsequent academic career) may be therefore the following.

1) Produce a general theory of divisors and establish a Riemann-Roch Theorem for A-motives.

2) Develop a "Picard cohomology theory" for A-motives and unify with the already existing ones (De Rham, étale, crystalline, etc.).

3) Reformulate the Birch/Swinnerton-Dyer Conjecture and/or the Riemann Hypothesis in terms of A-motives using the unified cohomology expected in the previous item. ……………………..
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For more information about doctoral scholarship and PhD programme at Xi'an Jiaotong-Liverpool University (XJTLU): Please visit

http://www.xjtlu.edu.cn/en/study-with-us/admissions/entry-requirements

http://www.xjtlu.edu.cn/en/admissions/phd/feesscholarships.html

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/Dr. ……
(…….Luca.Demangos@xjtlu.edu.cn), whose personal profile is linked below,
http://www.xjtlu.edu.cn/en/faculty/...............