

PhD studentship (Full-time)



Institution	Xi'an Jiaotong-Liverpool University, China
Department	Department of Civil Engineering
Supervisors	Principle supervisor: <i>Xiaonan Tang</i> (Xi'an Jiaotong-Liverpool University) Co-supervisor: <i>Ming Li</i> (University of Liverpool, UK)
Application Deadline	Open until the position is filled
Funding Availability	Funded PhD project (world-wide students)
Project Title	Effect of Vegetation Patch on Compound Channel Flows 植被群块对复式河道水流影响的研究
Contact	Please email xiao.tang@xjtlu.edu.cn and copy doctoralstudies@xjtlu.edu.cn with a subject line of the PhD project title

Requirements:

The candidate should have a first class or upper second class honors degree, or a master's degree (or equivalent qualification), in Civil Engineering or related fields. The ideal candidate will have some knowledge of hydraulics and flow measuring techniques. Previous experiences in numerical modelling would be advantageous. The successful candidate should be highly self-motivated and be prepared for laboratory work and CFD modelling. Evidence of good spoken and written English is essential. The candidate should have an IELTS score of 6.5 or above, or an equivalent qualification, 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 3500 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:

Many natural rivers and man-made channels have a compound cross-section, which comprises one deep main channel bounded with one or two shallow floodplains, where various vegetation exists. Compound channels play an increasingly important role in flood risk management, river ecological restoration, urban river landscape design, and water environmental protection. Vegetation (like herbs, shrubs and trees) on floodplains influences the flow field and related phenomena, like erosion and sedimentation, nutrients, pollutant transport, and life of microorganisms.

Vegetation patch widely exists on floodplains and varies in size and distribution, and its interaction with flow is very complex. Influence of vegetation patch on compound channel flow is unknown.

This proposal is systemically to study the impact of various vegetation patches on flows in an asymmetric compound through novel flume experiments with the vegetation modelled under various submergences, types and configurations. The detailed flow structure can be studied through measurement of 3D velocity field by ADV. Then numerical modelling, e.g. 3D RANS or LES, can be used to study for a wide range of scenarios. The research outcome will understand the flow structure of such realistic vegetated flow and provide key dataset for modelling, which will advance the core knowledge gap and provide some practical guidance on river flood risk and environment management.

The primary aim is to understand the flow structure of vegetation patch and its impact on the velocity, flow resistance and discharge of compound channel flow.

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

<http://www.xjtlu.edu.cn/en/admissions/phd/entry-requirements.html>

<http://www.xjtlu.edu.cn/en/admissions/phd/feescholarships.html>

How to Apply:

Interested applicants are advised to email xiao.tang@xjtlu.edu.cn the following documents and copy doctoralstudies@xjtlu.edu.cn (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 above 6.5 or

equivalent is required

- 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)

Informal enquiries may be addressed to Dr. Xiaonan Tang (xiao.tang@xjtlu.edu.cn), whose personal profile is linked below, <http://www.xjtlu.edu.cn/en/departments/academic-departments/civil-engineering/staff/xiaonan-tang>