

IST – EPFL Joint doctoral Initiative

Thesis Topic Proposal Form

TITLE: Mathematical modelling of river habitats

FOCUS AREA: Environmental Hydraulics

Short Description

- The research is aimed at assembling and validating a numerical simulation tool for river habitat modelling;
- The modelling work involves coding an ecological sub-model into an existing 2DH simulation tool;
- Field work in Swiss and Portuguese rivers is envisaged to collect data on mean flow and turbulence, bed composition and mobility, vegetation characteristics and environmental parameters such as temperature;
- The ecological model will feature knowledge-based approach to quantify habitat preference, employing data from field campaigns.

Keywords: field study, ecological modelling, river ecology, fluvial hydraulics

SUPERVISORS

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Doct. Program: Civil Engineering

Doct. Program: Civil and Environmental Engineering

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Start institution: IST