IST – LNEC Joint Doctoral Initiative

Thesis Topic Proposal Form

TITLE: High velocity water jets and emptying flow procedures: CFD analyses and experiments

Short Description (max. 500 characters) Free surface complex phenomena such as rock scour development under high velocity water jets and pipe emptying processes are commonly found in hydraulic structures and water systems. Unsteady free surface flows with large velocity, pressure variations inside the pipes and interference with solid boundaries may occur in such processes. A suitable mesh free method of Lagrangian type nature is a suitable approach for solving problems with dynamic domains, free surfaces and impact events. Also, calibration and validation by means of adequate experimental data is seen as a key aspect to be considered when using these methods.
Keywords: Lagrangian domain; velocity impact; emptying process; CFD and experiments

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