

IST – LNEC track

Doctoral program: Civil Engineering

Thesis Topic Proposal Form

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| TITLE: Sediment removal efficiency of settling basins |
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| Short Description |
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Settling basins (SB) play an important role in the removal of sediments from water-intakes and small creeks in urban areas. The geometry of SB, and the geometry and layout of possible associated baffles and inlet/outlet structures are crucial for the performance of SB.

This research project is aimed at systematically investigating the influence of pertinent combinations of those geometric variables on the sediment removal efficiency as well as on the flow and the deposition pattern in SB.

Laboratory experiments are envisaged to characterize velocity profiles, thickness of the deposits, and sediment concentration of inflow and outflow. A CFD model will be validated and exploited to assess the sensitivity of the results to changes in the control geometrical variables.

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| Keywords: Sediment transport, settling basins, flow field, deposition pattern, laboratory experiments, modelling. |
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| SUPERVISORS |
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| Planned start date: 2017/03/01 |
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| Start institution (IST or LNEC): IST |
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