COURLIS Theoryguide





Authors and contributions

This theory guide was created by

Work under construction

We would like to warn the reader that this document is still under construction and could be improved in many ways. Any remarks, suggestions, corrections, etc. are welcome and can be submitted to the TELEMAC SYSTEM development team through the forum in the Documentation category: http://www.opentelemac.org/index.php/kunena/10-documentation.

Abstract

This guide aims at providing a comprehensive overlook of the theory behind COURLIS.

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Introduction

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1. General hypothesis

1.1 Hydraulics

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1.2 Suspended sediment transport

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1.3 Bedload transport

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2. Modelling sediment transport

2.1 Shallow water equations

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2.1.1 Local shear stress

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2.1.2 Efficient shear stress

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- 2.2 Modelling suspension
- 2.2.1 Transport equation

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2.2.2 Erosion and deposition source terms

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2.2.3 Bed evolution

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- 2.3 Modelling bedload
- 2.3.1 Exner equation

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2.3.2 Bed evolution

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2.4 Modelling slope stability

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3. Coupling and discretisation

- 3.1 Coupling between MASCARET and COURLIS wip
- 3.2 Space discretusation and planimetrage wip
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- 3.4 Bedload solver wip