

Numerical Simulation of Hydrodynamics and Transport Processes around a Wastewater Tank in a rectangular Channel using TELEMAC-2D

1. Outline of the problem and basic parameters

Water flows in a rectangular channel:

$L = 260$ m long

$B = 90$ m wide

$S = 0.002$ % slope

$k_{st} = 40 \text{ m}^{1/3}/\text{s}$ Manning Strickler friction coefficient

A waste water tank has been installed in the channel (dimensions 60 m by 12.5 m) and considered as an artificial island (see the next section: research project **SPREE 2011**)

Initial conditions:

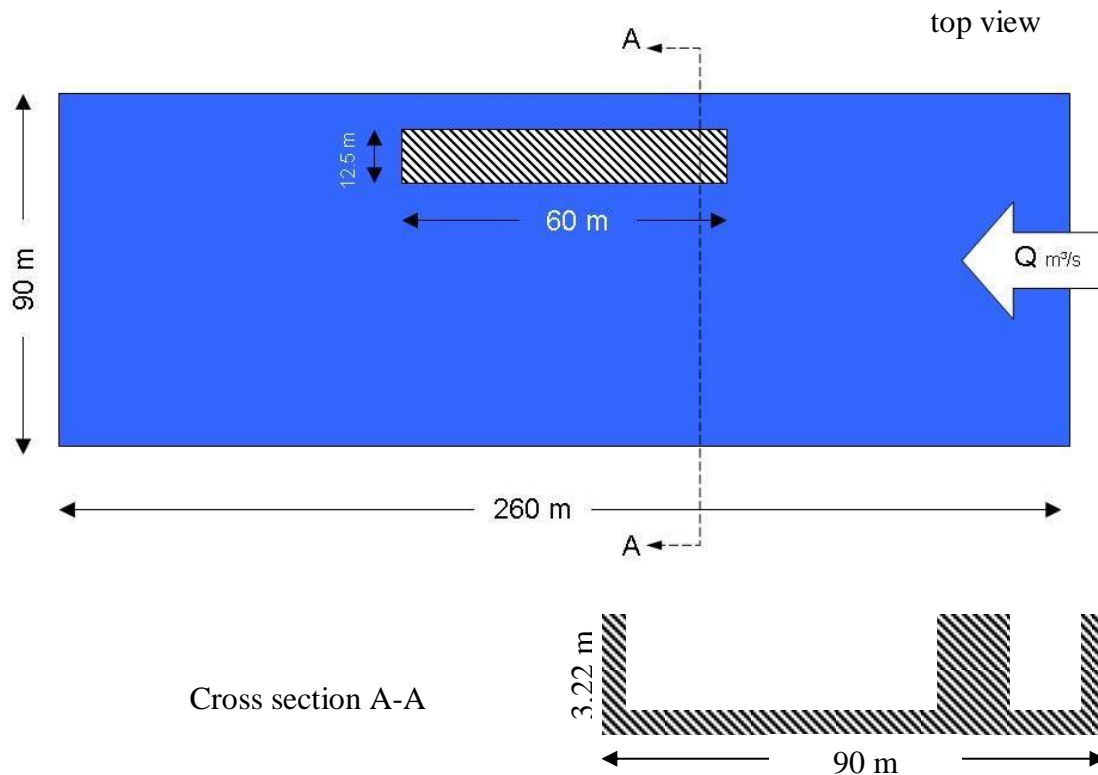
$h(x, t=0) = 0$ m

$v(x, t=0) = 0$ m/s

Boundary conditions:

$H(x=0, t) = 2.66$ m

$Q(x=0, t) = 30 \text{ m}^3/\text{s}$



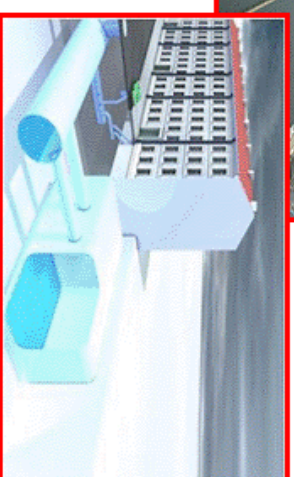
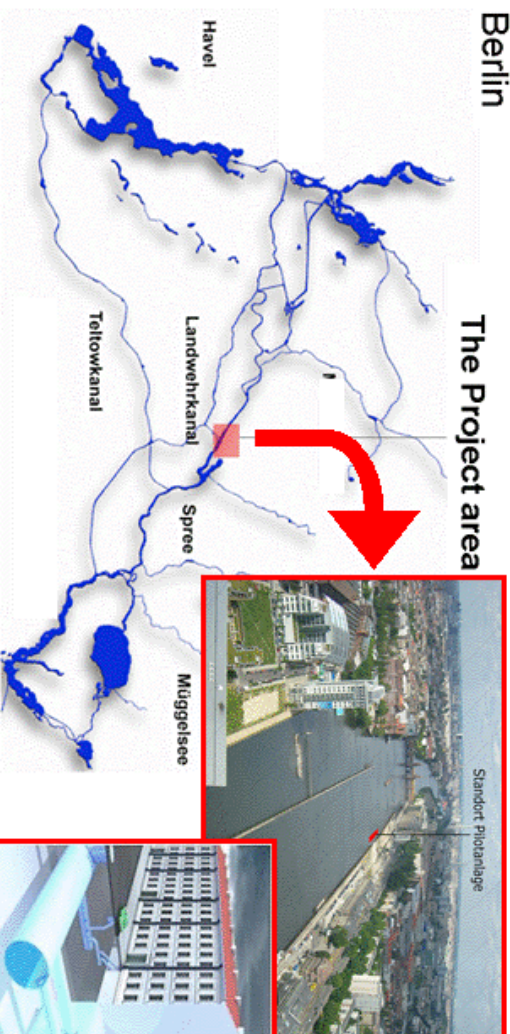
The flow and transport processes in this channel will be simulated as two-dimensional flow by the open **TELEMAC-MASCARET** modeling system.

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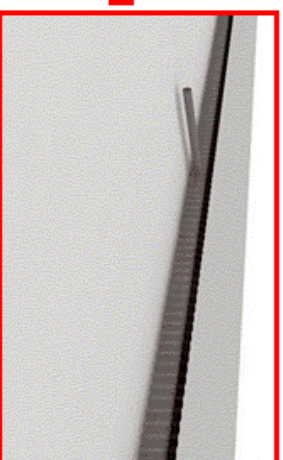
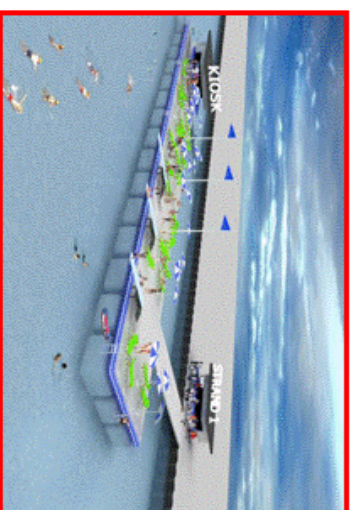
Spree2011

Berlin

The Project area



conventional solution



problem of combined sewer overflow