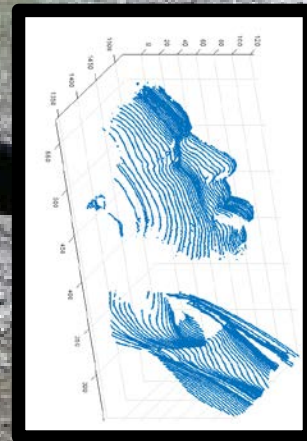


# FOULC project

Mathieu Lepot, Francois Clemens, Jeroen Langeveld

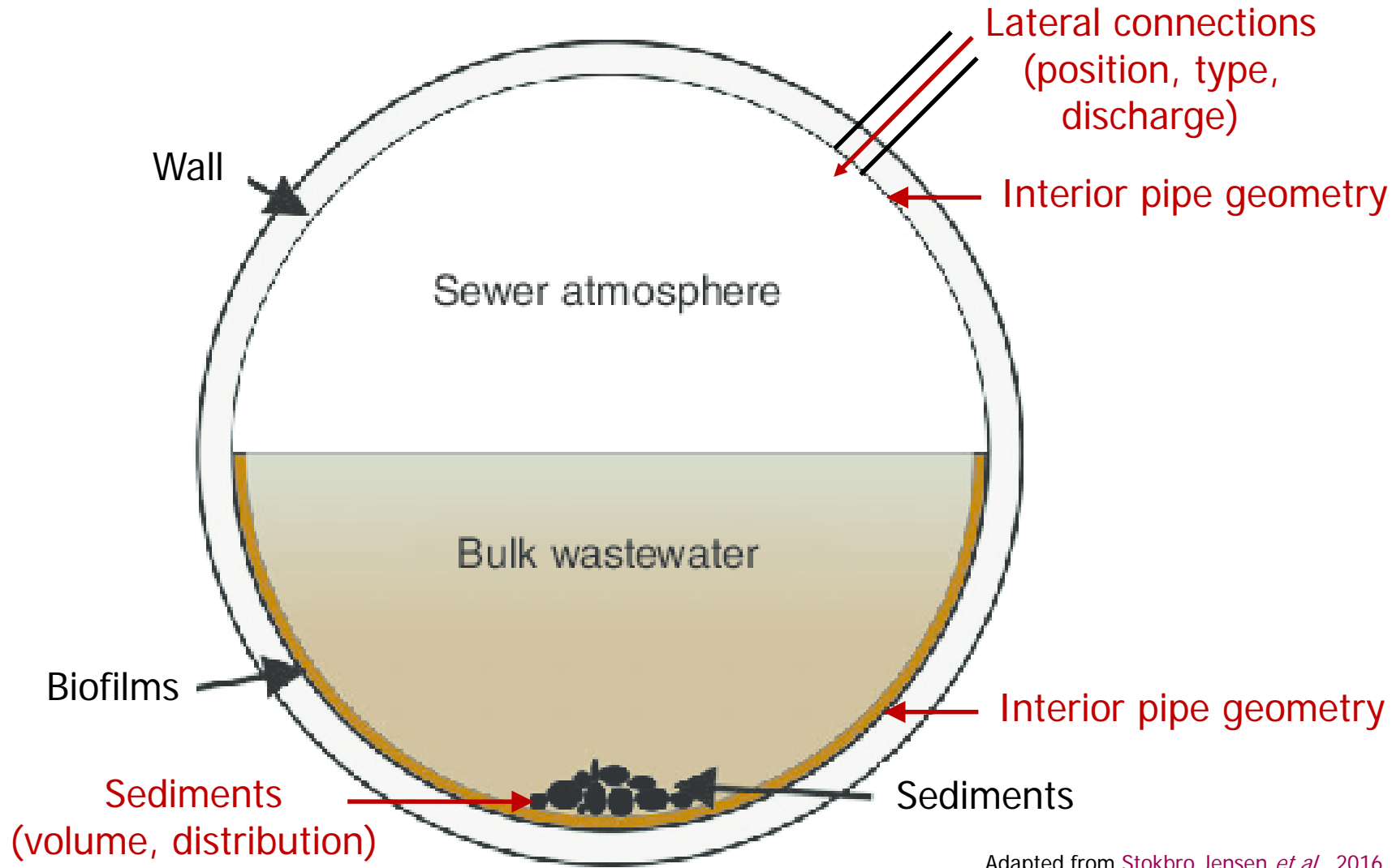


# The FOULC project

- Fast Over-all scanning of Underground and Linear Constructions



# FOCUS of FOULC

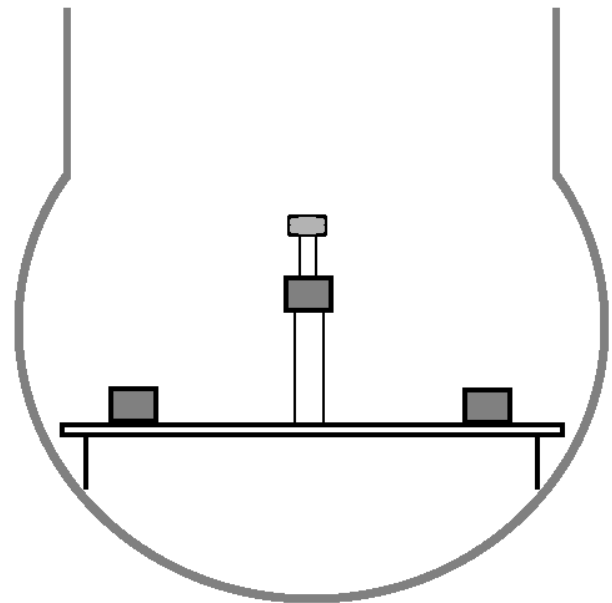
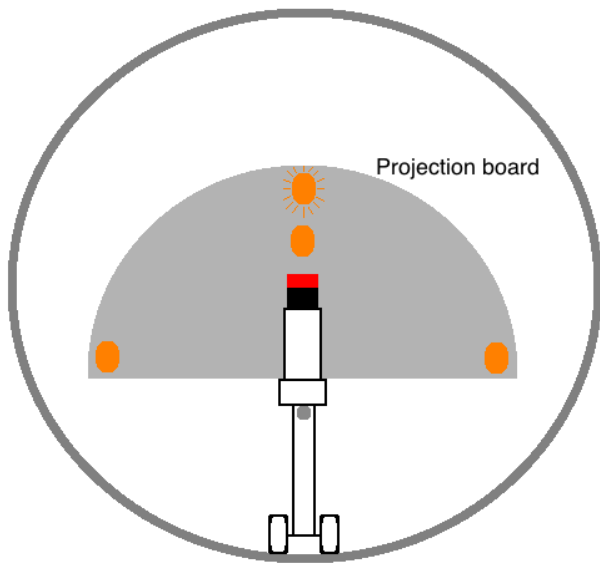
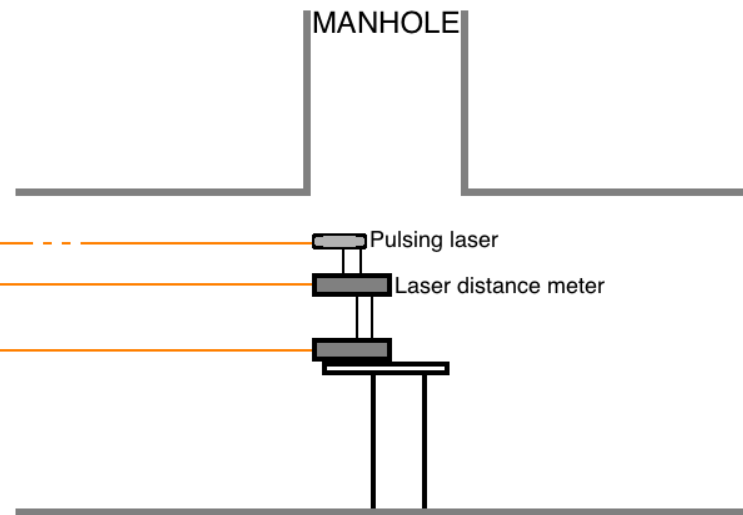
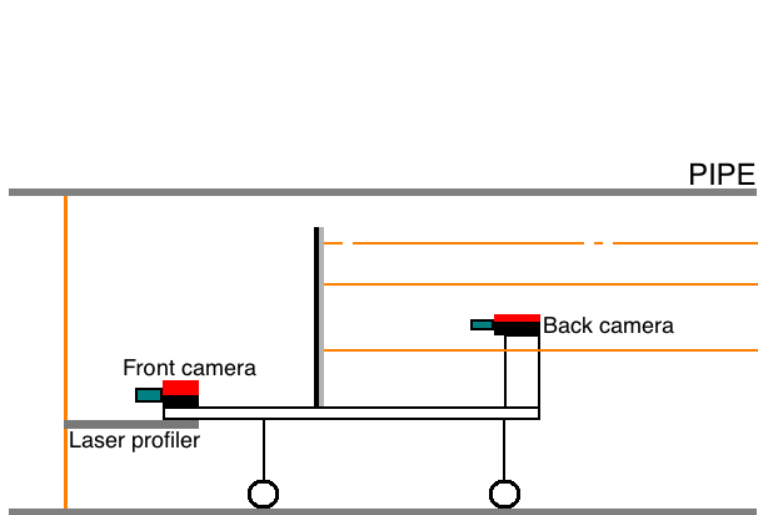


Adapted from [Stokbro Jensen et al., 2016](#)

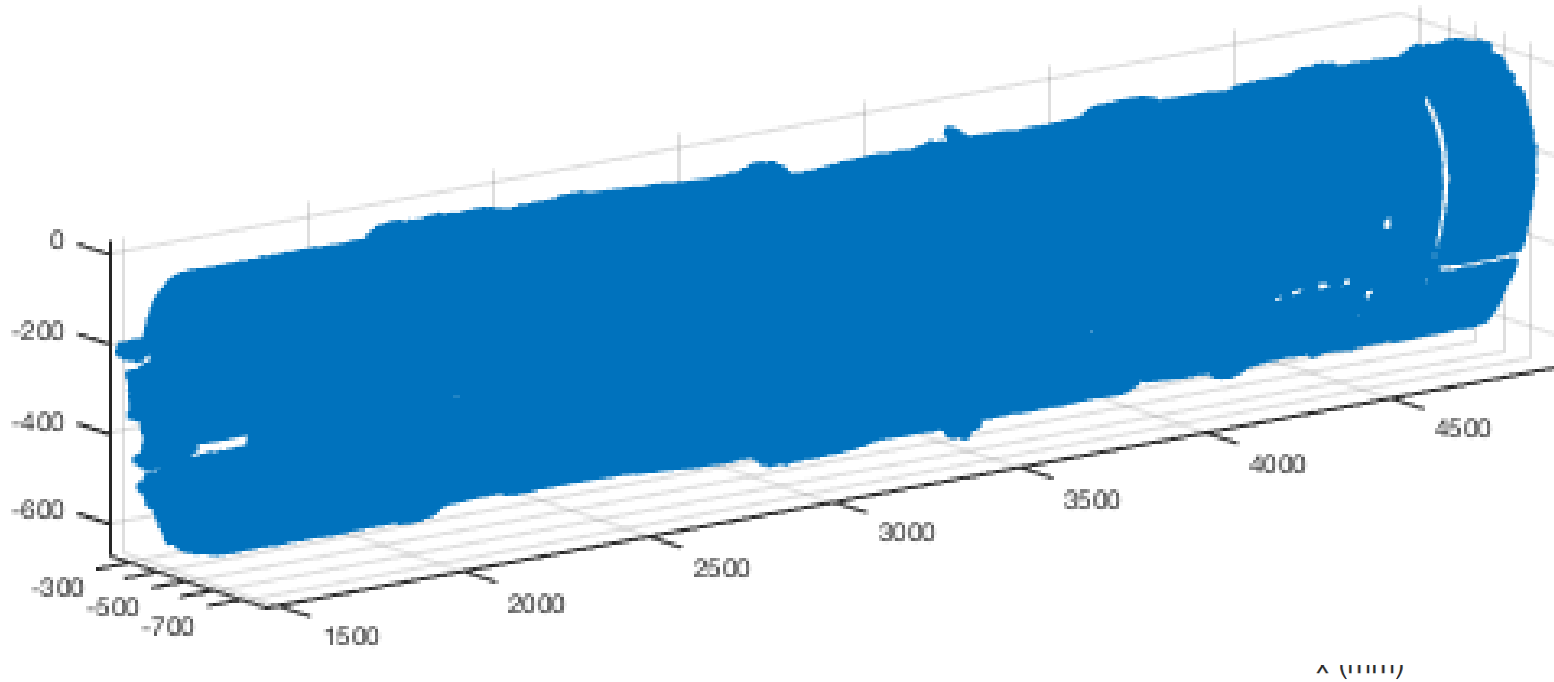
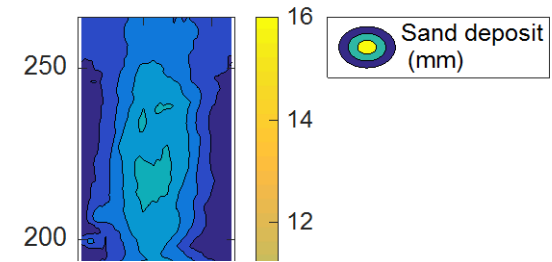
# The FOULC project

- General ideas
  - To combine existing techniques on the same system
  - Two platforms:
    - A fixed one (3 LDM, pulsing laser) to correct the position and to synchronise both data acquisition systems
    - A moving one (Spyboat Technology)





# The FOULC project



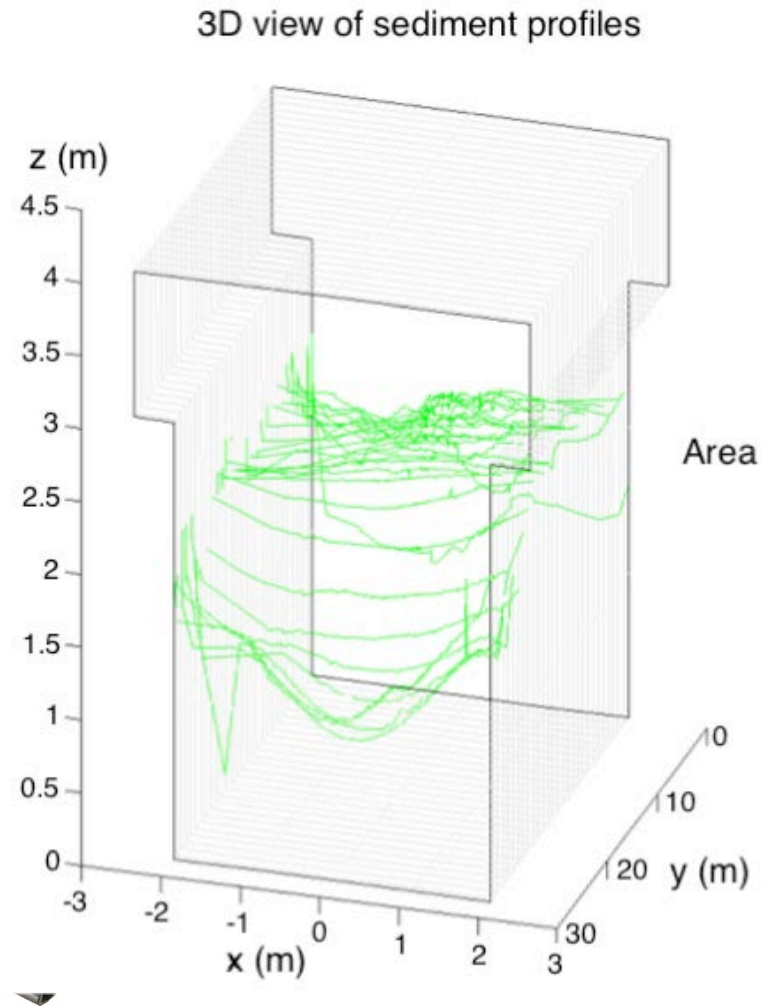
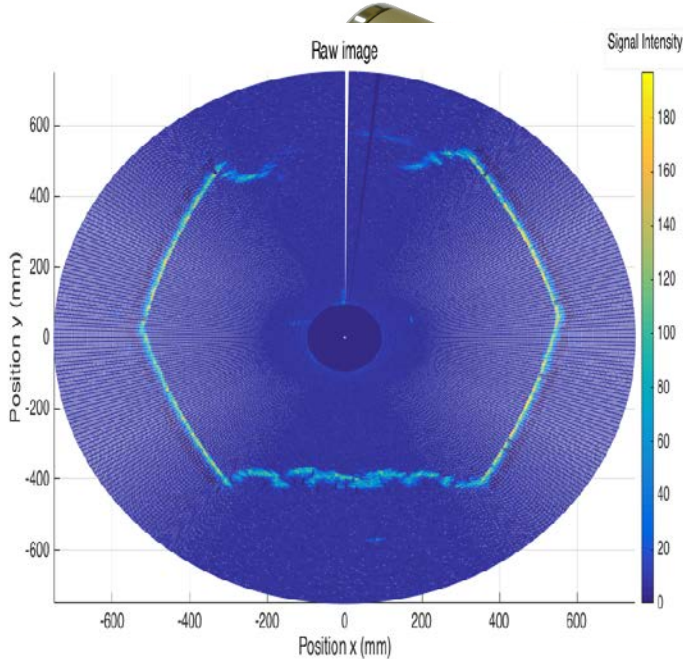
# The FOULC project

- Following of ...
  - A previous Post-Doc at INSA Lyon (sonar)



# Interior geometry & Sediment (below the water level)

- Sonar
- Materials
  - Sonar (Marine Electronics Ltd, Mini Pipe)
  - Internal notch and roll sensors

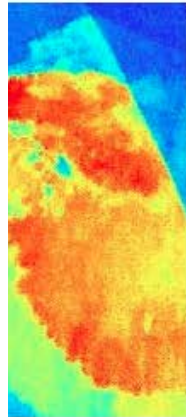
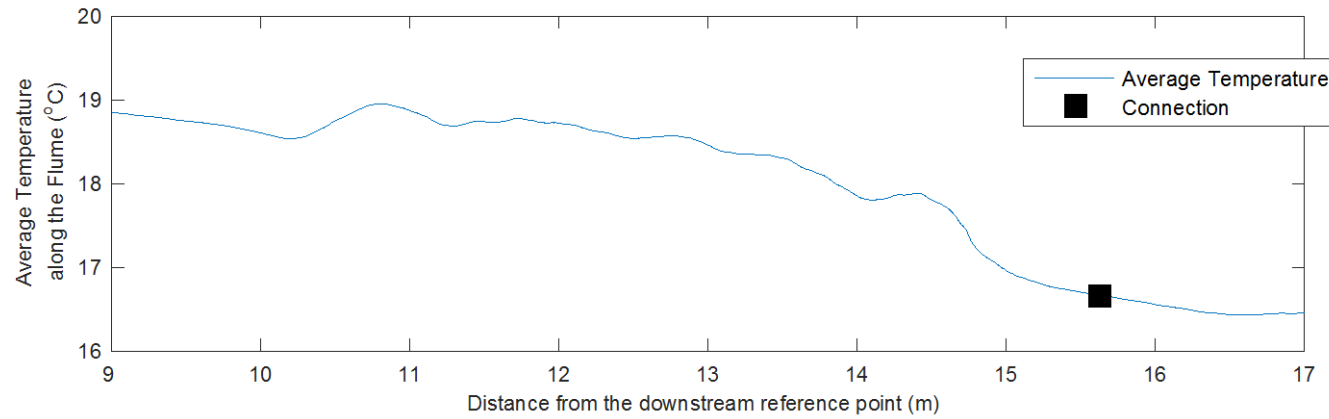
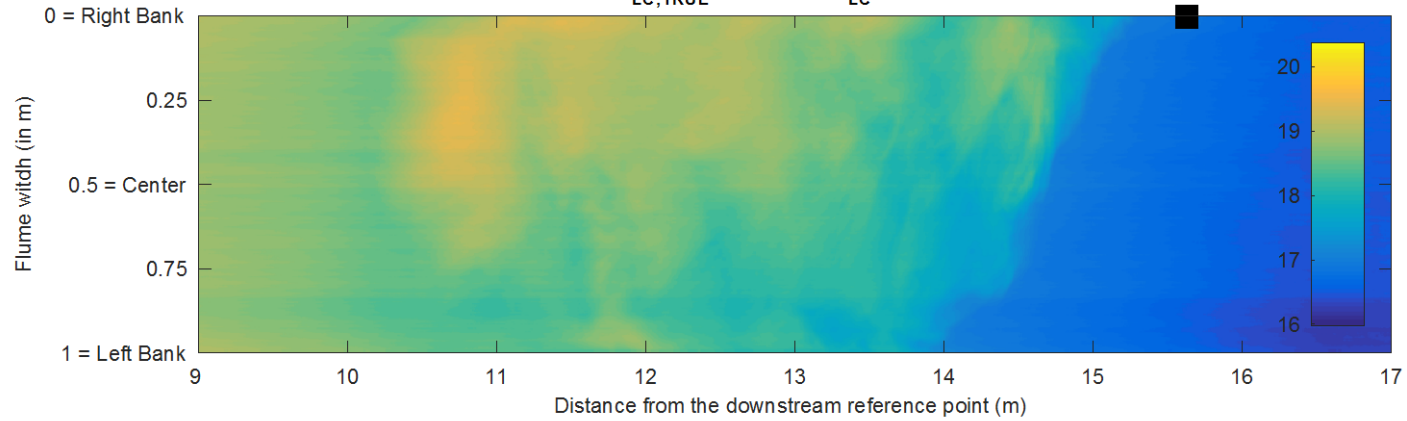




2D Temperature Map at the Free Surface  
Connection: D 200mm

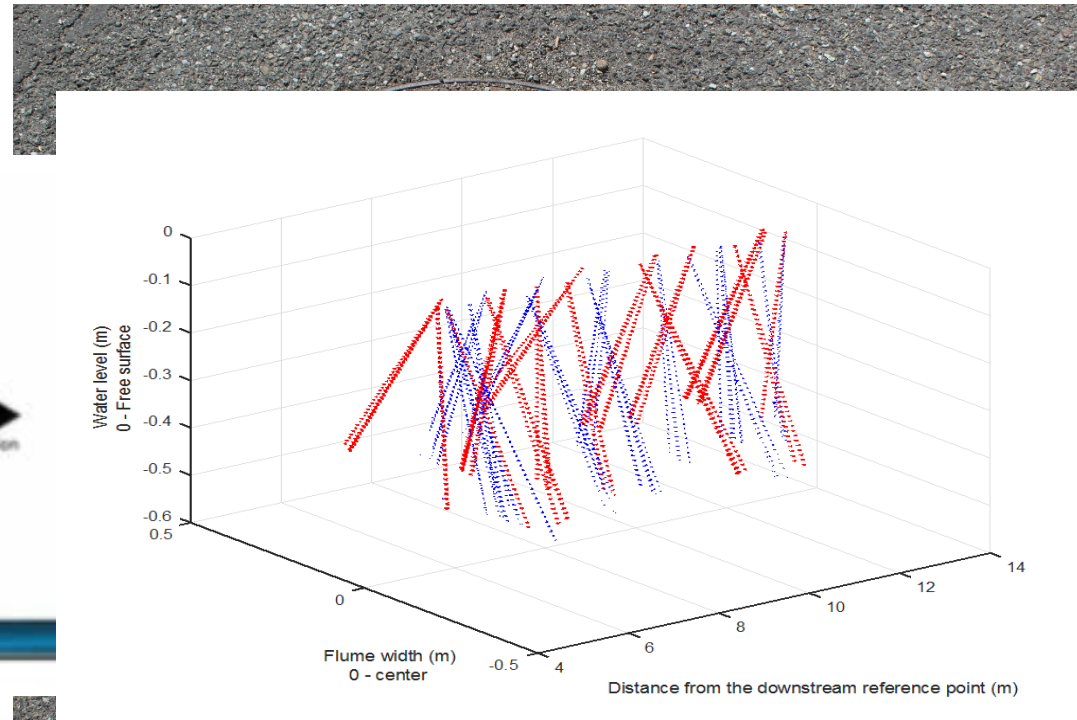
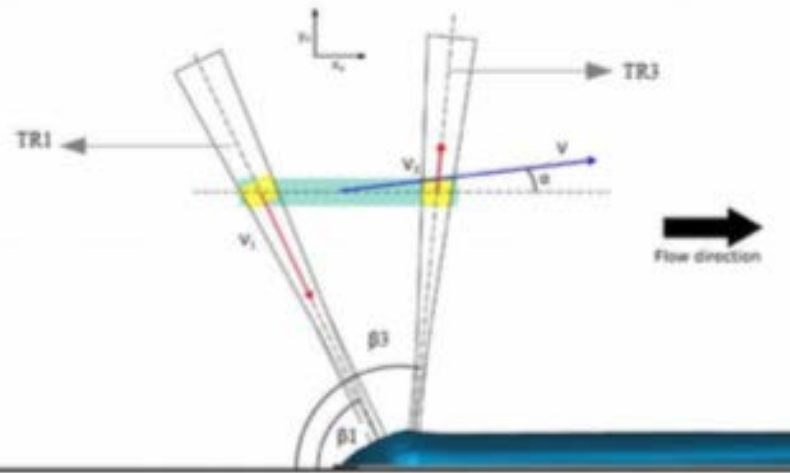
$Q_U = 100 \text{ l/s}$  &  $T_U = 15.9 \text{ }^\circ\text{C}$

$Q_{LC,TRUE} = 2.84 \text{ l/s}$  &  $T_{LC} = 33.5 \text{ }^\circ\text{C}$



# The FOULC project

- Following of ...
  - The MSc thesis of Sebastian Cedillo (V/T profiler)



# The FOULC project

- Extension with ....
  - Biofilm detection and mapping with UV light fluorescence (on going)



# Objectives

- Done
  - Design of both platforms
  - Two data acquisition software (Matlab)
  - Control system (almost finished, was challenging)
- Still on the to do list
  - Construction of both (fixed and moving) platforms (Spy boat)
  - Data processing software (compilation of existing research codes)
  - Test the control system in the lab (Sept 2019)
  - Test the system in the lab (Nov 2019)
  - Test in the field
  - Publish 😊

# Acknowledgement

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