# Analysis of sediment transport from recorded signals of grains in a gravel-bed river

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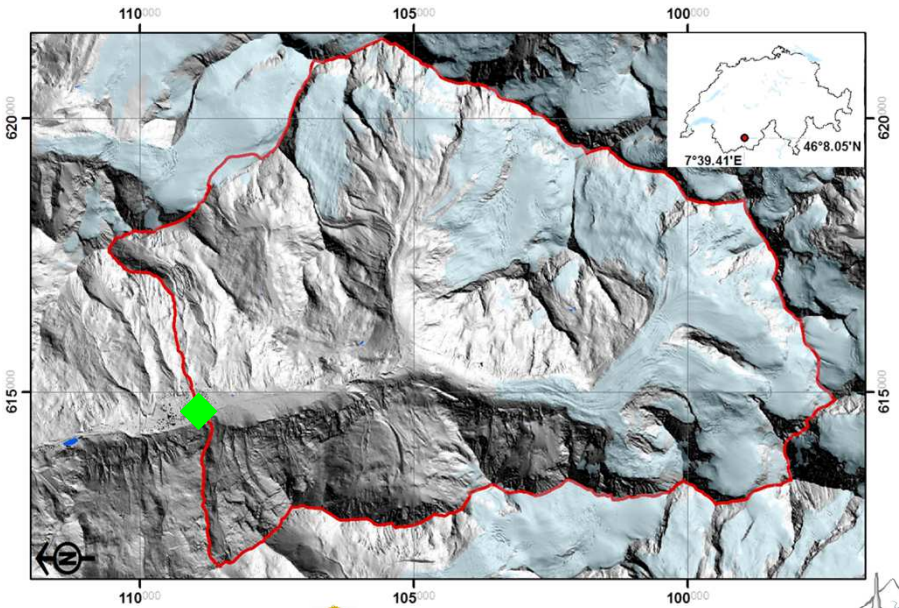
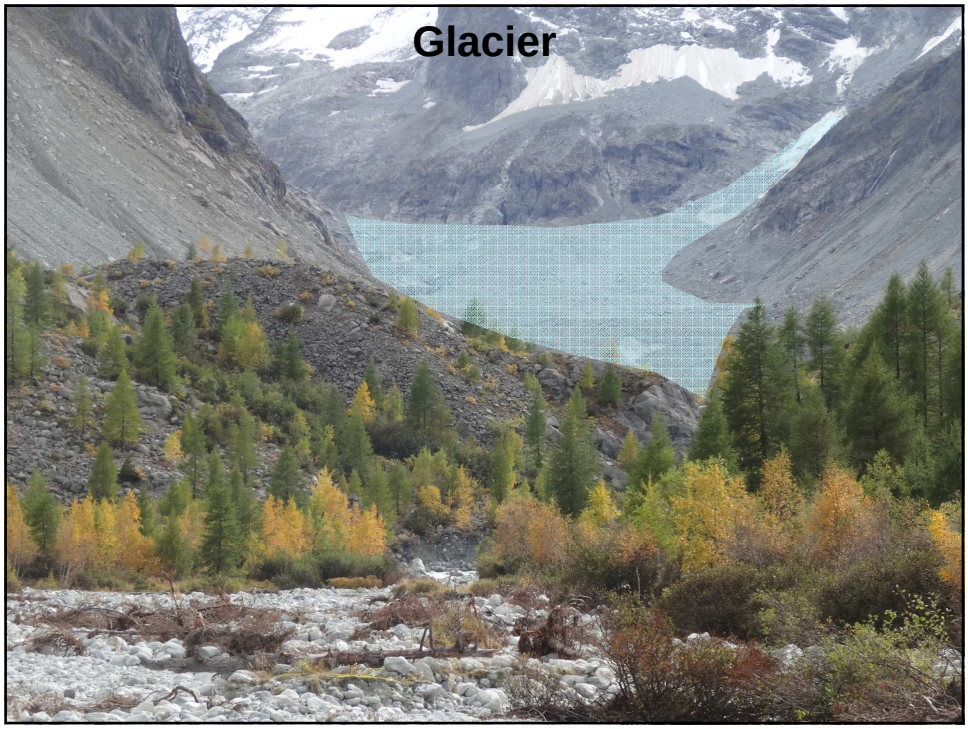
## Location

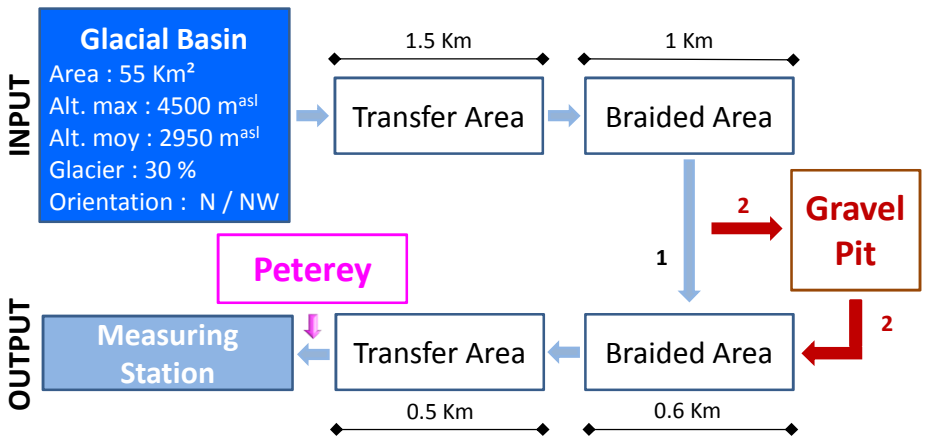



Braiding, alternating bars, sediments & Co

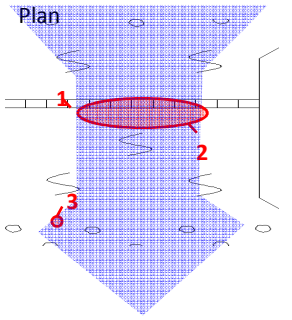

Glacier

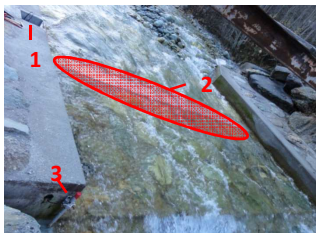
# High mountain hydrologic regime

# Sediment system

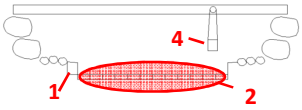


# Measuring station



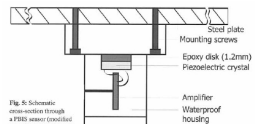








Cross-section

1 : Pressure gauge
2 : Geophones
3 : Conductimeter
4: Sampling basket

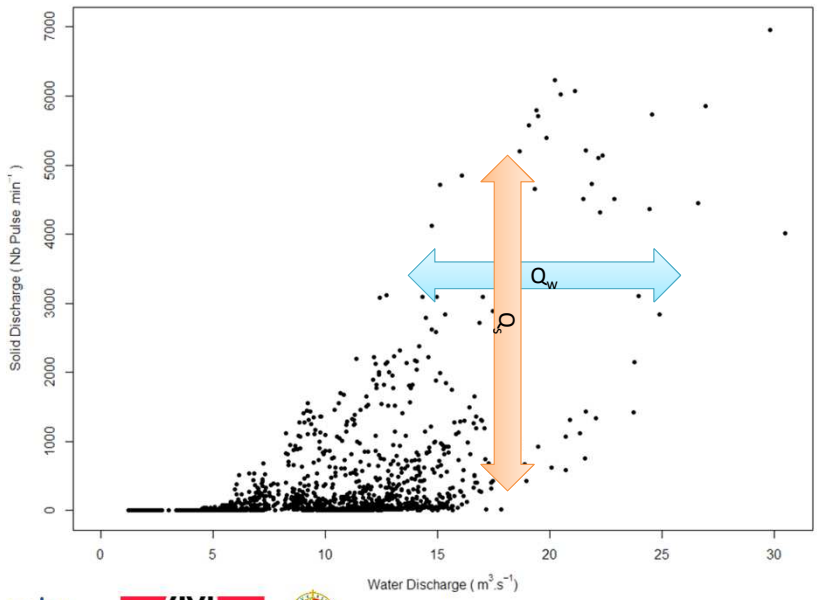



Source : WSL

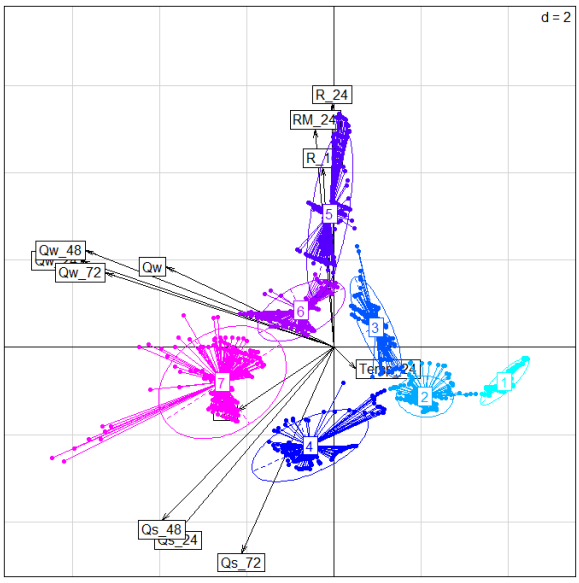
# Measuring station

# Geophone calibration

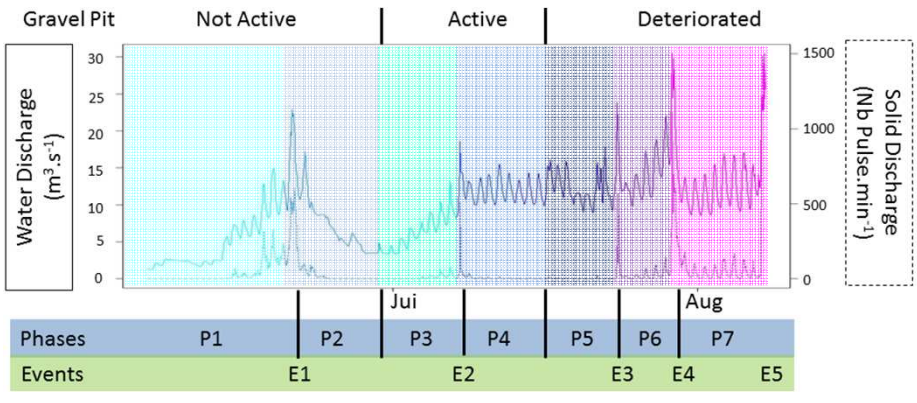
# Raw data



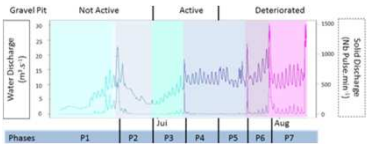
# Data mining – PCA – tree classification

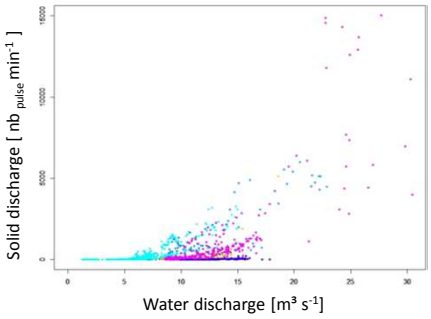


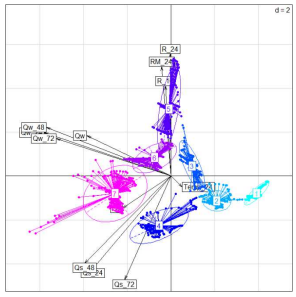

# Phases discrimination



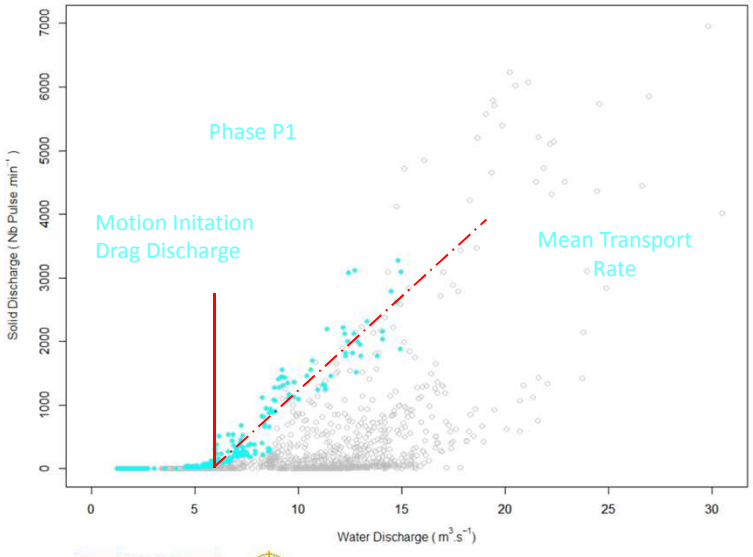
# Processes discrimination ?



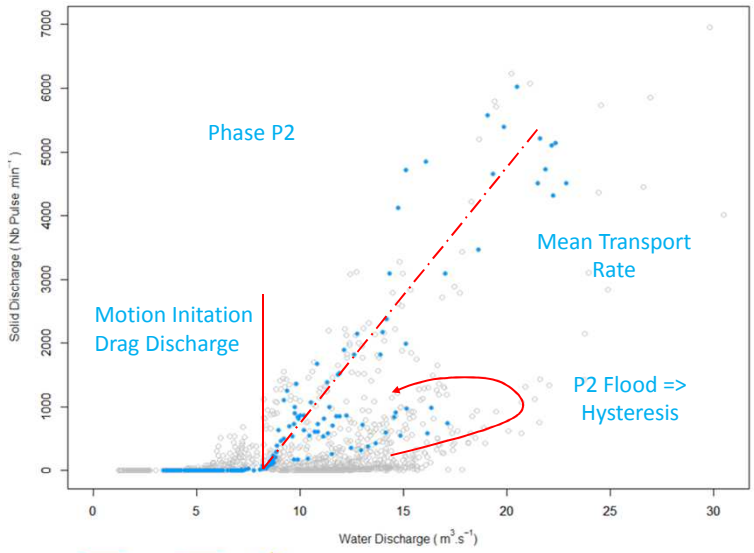



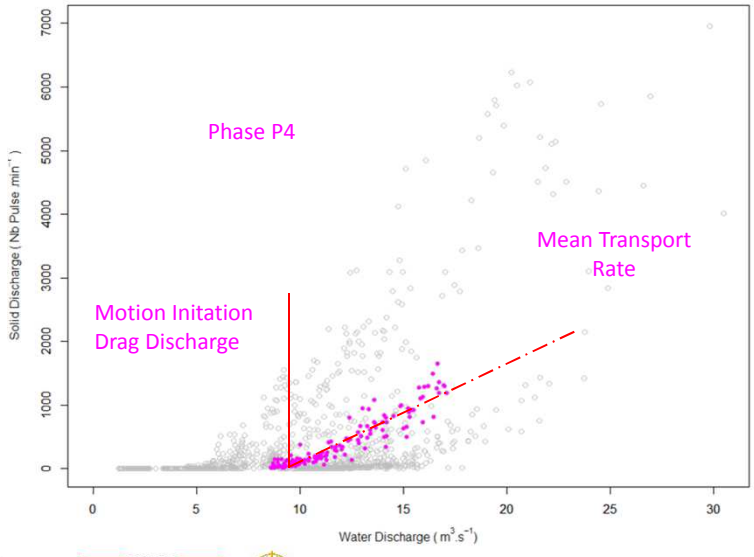

# Engineering application : data



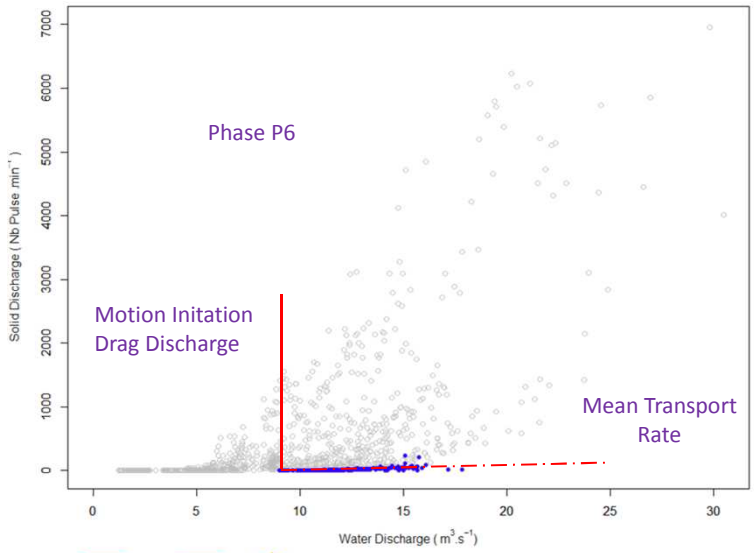
# Engineering application : data



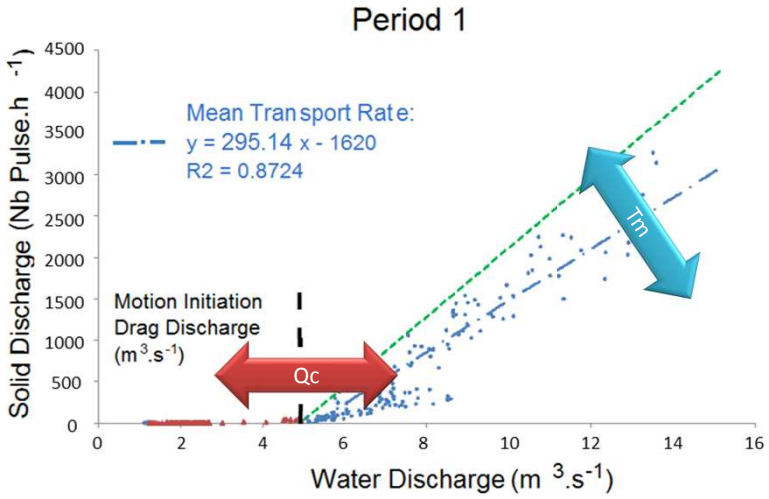

# Engineering application : data



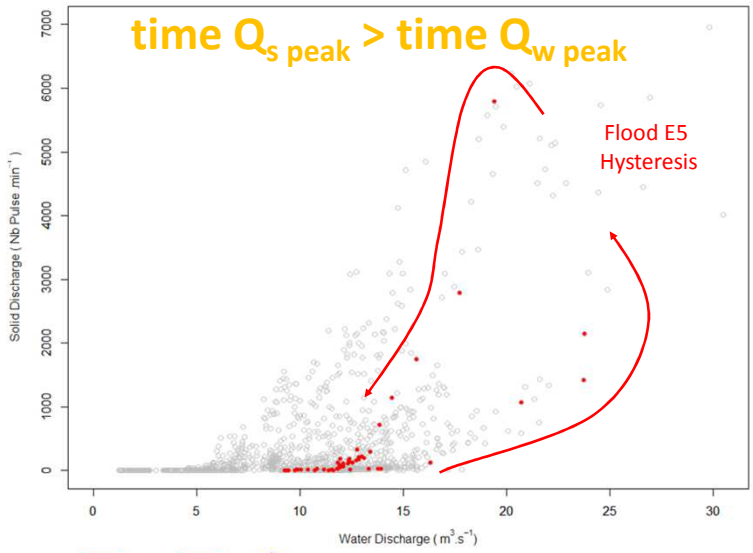
# Engineering application : data



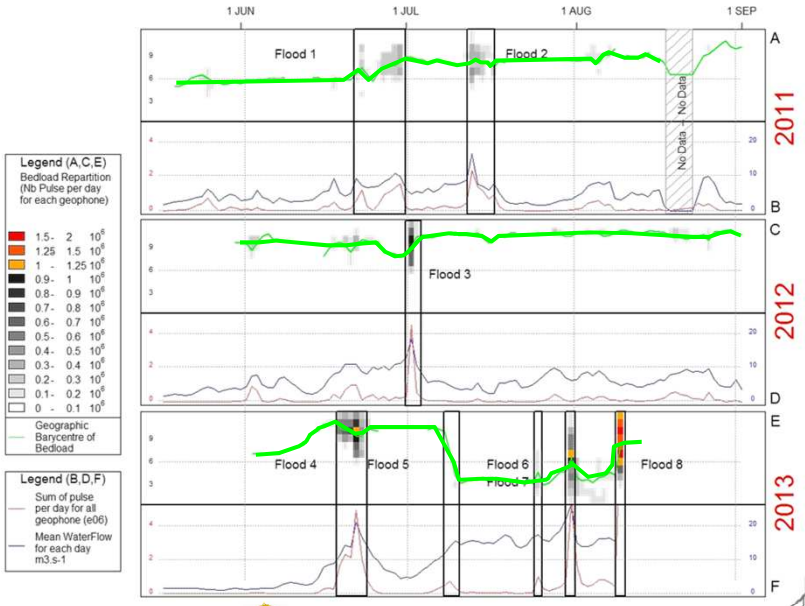

# Engineering application : philosophy



# Engineering application : soft knowledge




# Channel work ?



## Take home message !

- Measures allow going into the details of natural processes
- Its has direct engineering applications
- Sediment availability changes in time and affects the sediment transport rate
- Sediment transport in such environment needs still developments
- Measures corroborate the most up-to-date academic researches showing strong deficiencies of current hydraulic models of sediment transport

## Thanks you for your attention !