EVNATURB - Kick-Off Meeting

Evaluation des performances éco-systémiques d'une renaturation du milieu urbain

ENPC - Lundi 16 Octobre 2017

This afternoon

- **15h15 - 15h30h: Arrival**
- **15h30h - 16h: Presentation of the project and its members**
- **16h - 16h30: Thematic presentation on evapotranspiration measurements**
- **16h30 - 17h: Thematic presentation on pilote sites**
- **17h - 17h30: Thematic presentation on modelling tools**
- **17h30-18h: Presentation of Marie-Claire Ten Veldhuis from TU Delft**
- **From 18h: visit of the Green Wave pilot site**

HYDROLOGY METEOROLOGY and COMPLEXITY

Multi-scale observation

Multi-scale analysis

Complex system approach for modeling

Chair Hydrology for Resilient Cities

Chaire Hydrologie pour une Ville Résiliente

Blue Green Dream

- ➡ Poor knowledge about the physical processes
- ➡ Lack of modeling thermo-hydric coupling tool
- ➡ Few works dedicated to urban biodiversity
- ➡ No link between eco-system services and operational constraint & objectives

Objectives

Couple hydrology, thermic, urbanism & biodiversity

Characterize the spatio-temporal viability through scales

Develop a scientific network devoted to BGS monitoring

Consider local socio-environmental stakes and constraints

Development of the EVNATURB platform

Assessment tool to quantify the multi eco-system services provided pb BGS at the urban project scale

Organization

Work Package 1

Monitoring network & Characterization of the spatio-temporal variability

- Study thermo-hydro behaviour of BGS
- Characterize the spatio-temporal variability of the involved processes
- Follow performances over time
- Create an 'Observation' database

Work Package 2

Thermo-hydric modelling

- Develop thermo-hydric couplings
- Parameter the biodiversity
- Assess BGS thermo-hydric performances at different scales

Work Package 3

BGS implémentation

- List social and environmental factors leading BGS implementation
- Associate plant species and substrates to their ecosystem functions
- Define quantitative indicators
- Select real case studies

Work Package 4

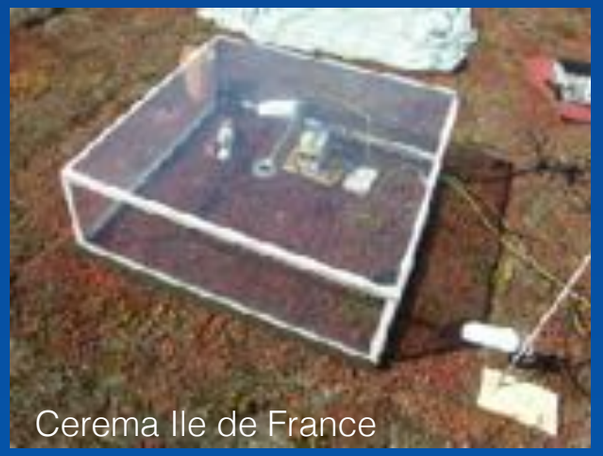
Development of the EVNATURB platform

- Develop a user-friendly interface
- Produce the input files required to compute thermo-hydric impacts
- Demonstrate the EVNATURB platform on real case studies

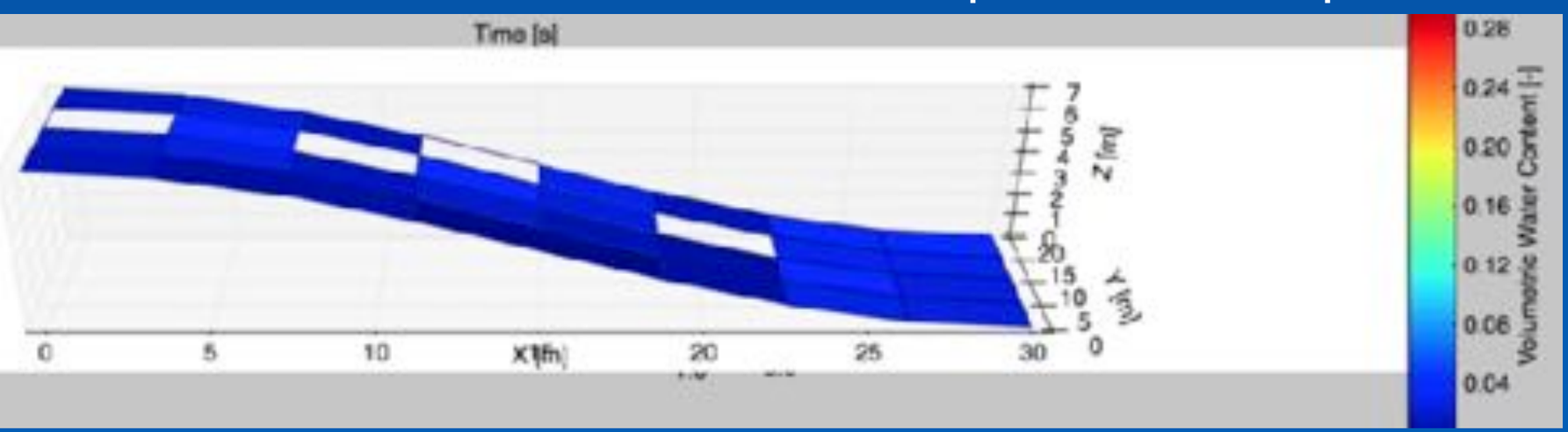
WP1: Monitoring network & characterization of the spatio-temporal variability

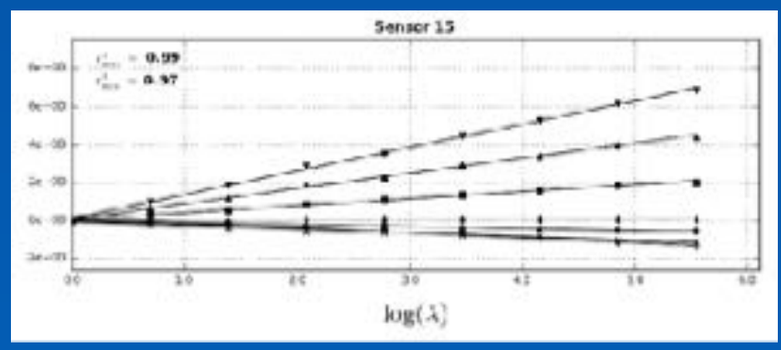
- Measurement of evapotranspiration fluxes

Odhiambo et Savage, 2009


Cerema Ile de France

- Characterization of spatio-temporal variability





- Creation of database devoted to BGS

EVNATURB

sense CITY

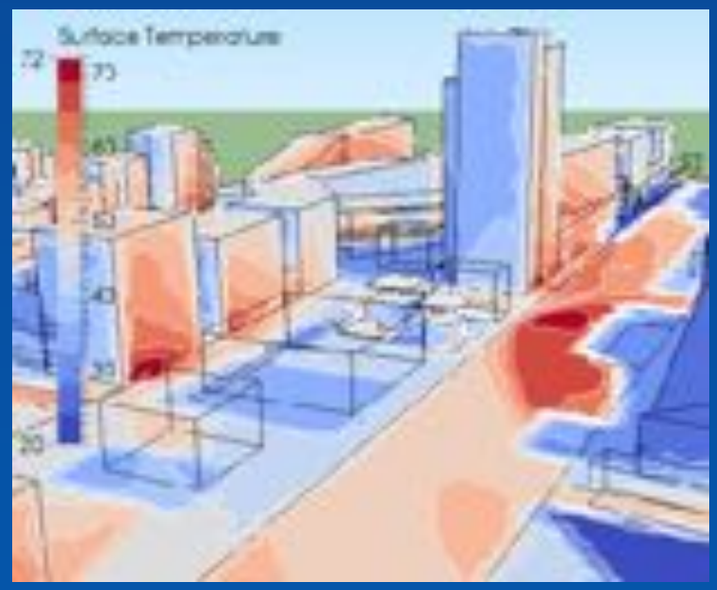

Cerema Ile de France

WP2: Thermo-hydric modelling

- Improvement of evapotranspiration estimation in SOLENE-Microclimat

$$\frac{\partial \theta}{\partial t} = \frac{\partial}{\partial z}\left[K(\theta)\left(\frac{\partial h}{\partial z} + 1\right)\right]$$

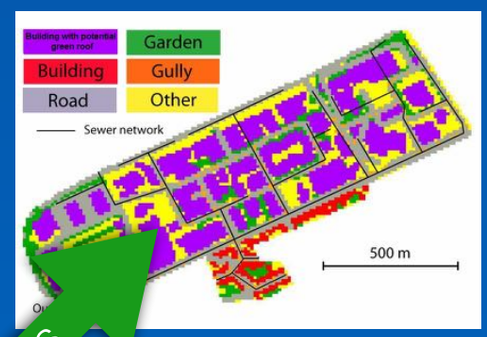
SOLENE MICROCLIMAT



- Parametrization and Validation

Wide range of configuration

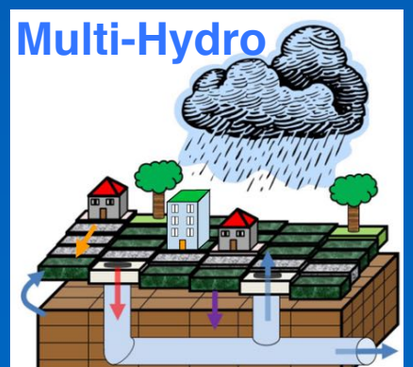
EVNATURB

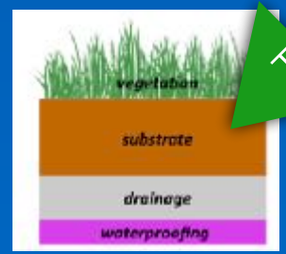


- Development of a Multi-scale modeling

SOLENE MICROCLIMAT

Coupling





Through scales

WP3: BGS implementation

- Review of local environmental constraints and objectives

HQE AMÉNAGEMENT
DÉMARCHE CERTIFIÉE PAR CERTIVÉA

- Classification of BGS ecosystem functions

- Definition of case studies

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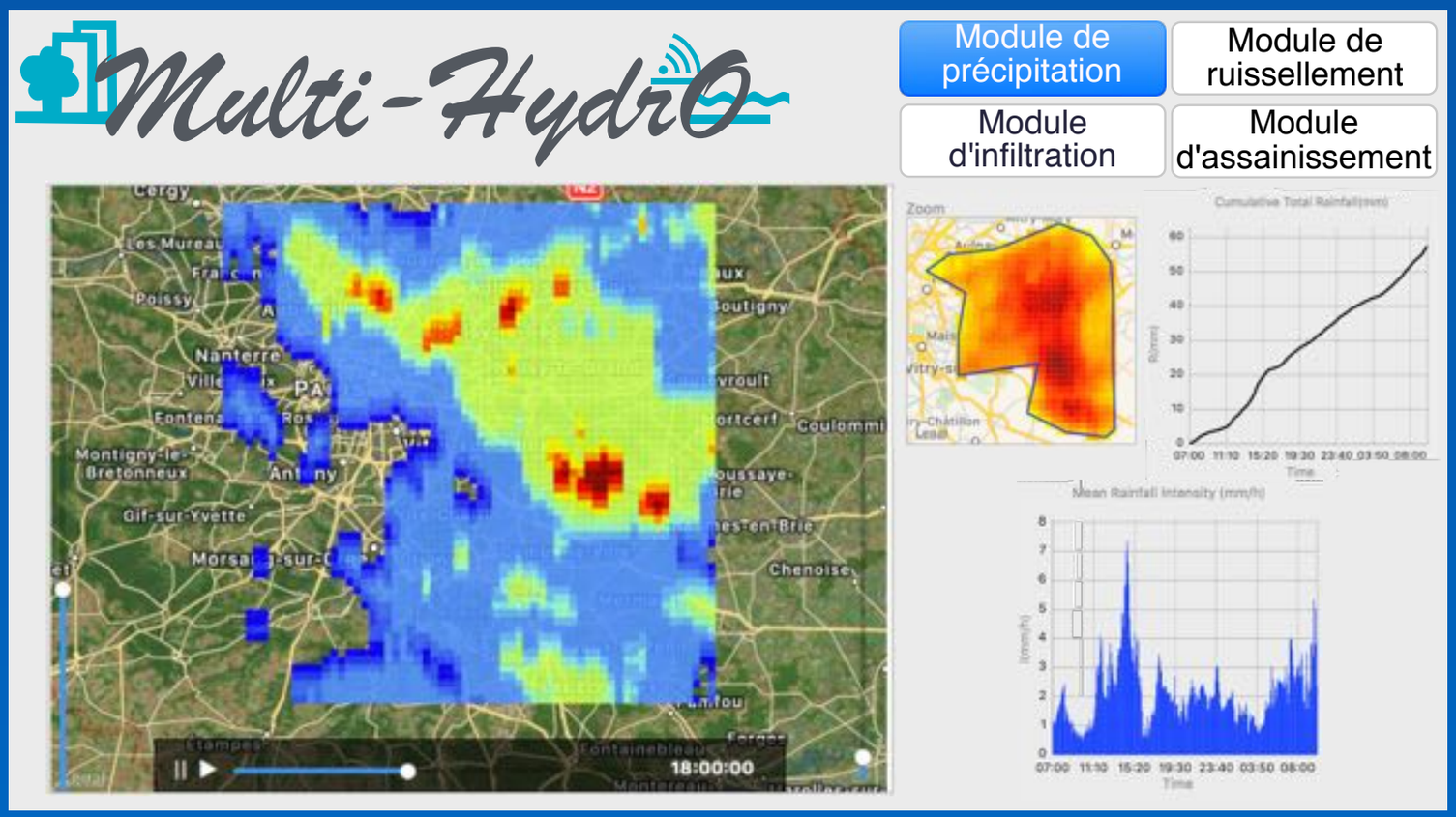
WP4: Development of the EVNATURB platform

- Design and development of the EVNATURB interface
- Computation of environmental indicators
- Demonstration of real cases



WP4: Development of the EVNATURB platform

Layout of the urban project

Environmental constraints and objectives

BGS proposal (scenarios)

Selection of indicators

Thermo-hydric simulation

Assessment of the eco-system services

International Scientific Board

Imperial College London

universitätbonn

TU Delft

Strategic & Scientific Steering

Pierre-Antoine VERSINI

HM&C HYDROLOGY METEOROLOGY and COMPLEXITY

Dissemination

Steering committee

Thematic meetings
Communication strategy
Final workshop

Research & Development

Academic members

Cerema

AgroParisTech
INSTITUT DES SCIENCES ET INDUSTRIES DU VIVANT ET DE L'ENVIRONNEMENT
PARIS INSTITUTE OF TECHNOLOGY FOR LIFE, FOOD AND ENVIRONMENTAL SCIENCES

École des Ponts ParisTech

Innovation & Transfer

Stakeholders board

CertiVéA

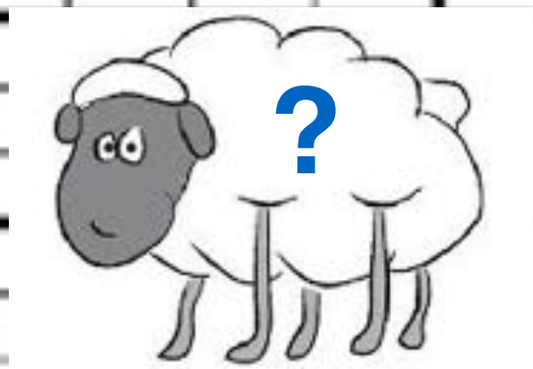
Société du Grand Paris

Vulkatec Dachbegrünung

LES JARDINS DE GALLY

Planning

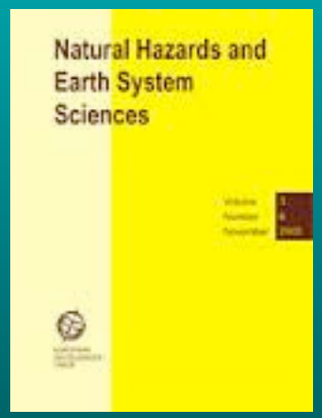
		Year 1				Year 2				Year 3				Year 4			
WP 1	Task 1				D1.1												
	Task 2							D1.2									
	Task 3										D1.3						
WP 2	Task 1						D2.1										
	Task 2									D2.2							
	Task 3											D2.3					
WP 3	Task 1										D3.1						
	Task 2											D3.2					
	Task 3											D3.3					
WP 4	Task 1																
	Task 2														D4.1		
	Task 3																D4.2
PhD																	
PD1																	
PD2																	
Meetings																	



Impacts and benefices

Teaching

Communication



Final workshop

Industrial impacts

Vulkalec Dachbegrünung

CertiVeA

Société du Grand Paris

LES JARDINS DE GALLY

Multi-scale

Multifunctional aspects

Systemic approach

Multiple interactions

AGORA of the 21st century

Invitation

18 October 2017, 9:00-18:00

Navier Amphitheater, École des Ponts ParisTech
6-8 avenue Blaise Pascal, 77455 Marne-la-Vallée

to write a new page of history,

that of Paris resilience