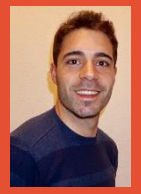
ENIGMA Meeting n°3

10/02/2018, Lausanne

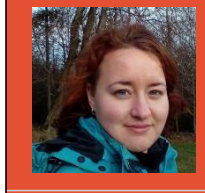
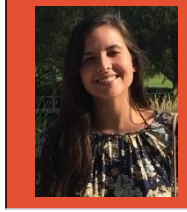
Experimental Infrastructure Board meeting : data & databases aspects

Field sites and data management plans for the different ESRs

Field sites and data management plans– 1/5

ESR	Sites	Models	Data types	Foreseen Database	Format
ESR11 - ULG Richard	• Hermalle sous Argenteau (+Colonster), • Hyderabad • Test site at Mons?	HydroGeoSphere Pest	• Chemistry samples + multiparameter probe data: O2, CO2, pH ... • hydraulic data + pumping test data (drawdown) • Tracer test: fluoscein concentrations + Temperature (+DTS) - Geophysics: GPR	• H+ database • H+ database • H+ database • Repository in H+database	• H+ format • H+ format • H+ format • segy + pdf with explanations
ESR3-UNINE Alvaro	Emme site	- HydroGeoSphere (HGS) - OpenFOAM	• Tracer test • UAV data • Hydraulic data	• HydroShare database	• To be defined
ESR7-UCPH Joel 	•HOBE sites (UCPH) •TERENO sites (UFZ)	Hydrogeosphere	• UAV data • Hydraulic data • DTS data • Temperature (profile) data	HOBE database	• H+ format

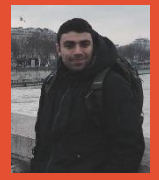
Field sites and data management plans – 2/5

ESR	Sites	Models	Data types	Foreseen Database	Format
ESR2-UFZ Guilherme	• TERENO Selke (UFZ) • HOBE sites (UCPH)	MIN3P / (HGS)	• Time series of Q,WL,T,EC,DO • Tracer test data (salt, reactive compounds: DO, Raz/Rru) • ERT • Hydrogeological parameters (aquifer props.)	To be defined	To be defined
ESR8-µQuans Anne-Karin 	Larzac (H+)	Larzac (H+)	?	? *=> Probably H+ database*	?
ESR5-CNRS Lara 	• Ploemeur • Orgeval • HRL SKB	• SWIP • PFC3D, 3DEC	- • Seismic data • Core data	• H+ database • Irstea Oracle • Aspo HRL database	• H+ format • segy

Field sites and data management plans – 3/5

ESR	Sites	Models	Data types	Foreseen Database	Format
ESR12-FZJ Satoshi	• Ploemeur site • SIP measurement system • Imaging setup (camera etc.)		• SIP signal • Image data • Hydraulic parameters	• H+ database	• H+ format
ESR15-ULG	• Hermalle sous Argenteau • Llobregat-Argentona	-pyGIMLi -mGstat	• ERT (surface and borehole) • GPR (borehole) • Tracer test	• H+ database	• H+ format
ESR14-CSIC Andrea	• Argentona site		• Time lapse ERT (crosshole) • Heat tracer data (fiber optics) • Time series of Head data, conductivity, temperature, salinity (borehole monitoring)	• H+ database (in discussion)	• H+ format

Field sites and data management plans– 4/5

ESR	Sites	Models	Data types	Foreseen Database	Format
ESR 1- CSIC Kevin	Argentona site	• SUTRA • TRANSIN • COMSOL	• Tracer Test, Pumping Test geophysical data	H+ database	H+ format
ESR6- CNRS Behzad 	• Ploemeur • HRL SKB	• MATLAB • COMSOL	DTS, DSS	H+ database	H+ format
ESR9- UNIL Alejandro	Possibly, Argentona site	• MATLAB • COMSOL	Tracer tests at laboratory scale. Electrical conductivity.	H+ Database	H+ format

Field sites and data management plans – 5/5

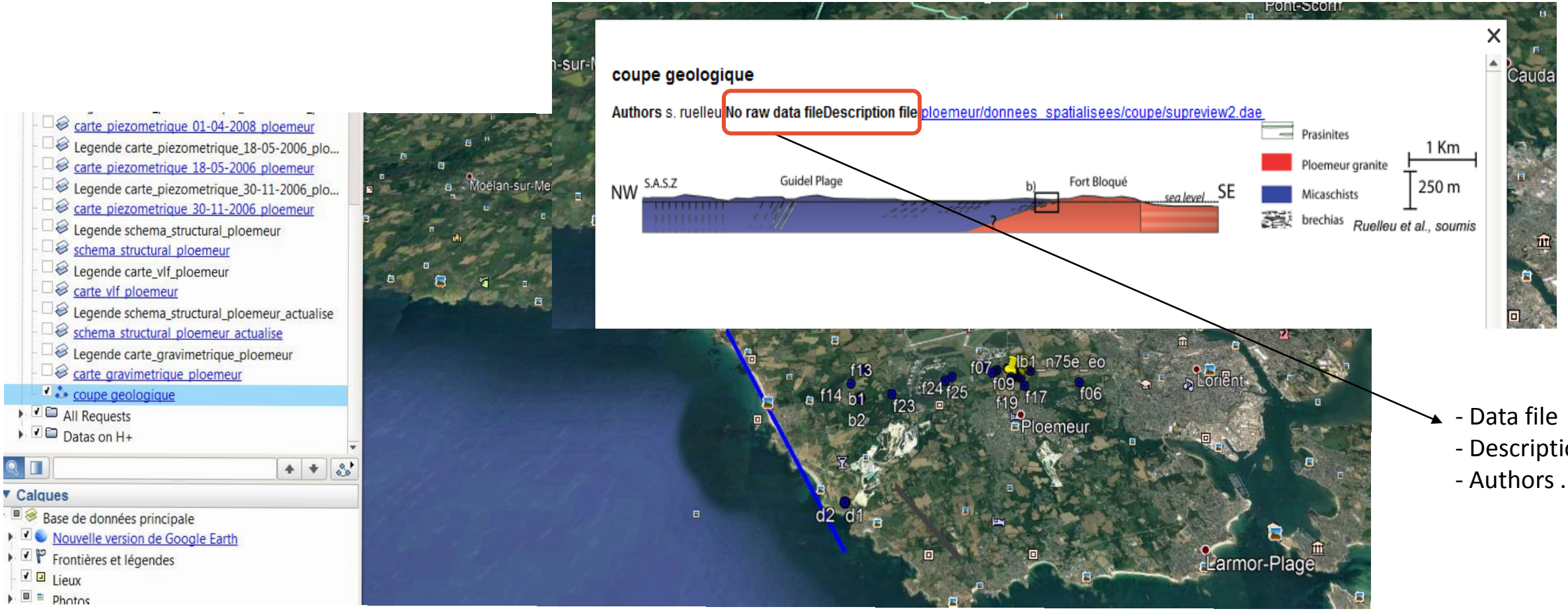
ESR	Sites	Models	Data types	Foreseen Database	Format
ESR10- FZJ Peleg	Krauthausen	TRACE and PARTRACE codes (written in FZJ); gprMax	Tracer test (saline), GPR	TERENO data portal	
ESR13-UT Veronika	Lauswiesen	e4d-pflotran (USGS) DUNE modelling code (https://www.dune-project.org/news/) - high performance PDE solver	• Tracer tests (heat, salt) • ERT • GPR	CAMPOS Database	- To be defined
ESR 4 –Itasca Justine	Äspö		• GPR • hyraulic data • geological data • Tracer test (to confirm !)	• SKB database • H+ database ? (to discuss)	. rad / rd3 / rd7 - excel

Further general points:

- Url access to the different databases on the ENIGMA website
- Email to the sites supervisors when the data are uploaded/downloaded
- Common calendar for the experimental fields campaigns
- News section on the ENIGMA website

Geophysical data

Geophysical data in the H+ database :
Geological cross section - Google earth view



- Data file
- Description file
- Authors ...

Geophysical data in H+ database

Geological cross sections, seismic lines (cross section?)
-> spatialized data :
- 2 geographical coordinates (start and end points),
- image file, data file (segy …), description file (pdf ...)
- can be linked to an experiment

Surface GPR data can be defined as spatialized data
- data file (segy) + image file
- can be linked to an experiment
- link to a network of points (to be created)

Borehole GPR :
radar imaging (like acoustic imaging or optical imaging)

UAV :
image + data file + description file

ERT on surface
- spatialized data : image file + data file + description file
- can be linked to a network of points (to be created)
- can be linked to an experiment
- measurements in data file or in database ?

To create a new site in the H+ database

What do we need ?

- The name of the site
- The administrator and subcribers names
- The coordinates of the wells/stations

ITN Enigma

Thank you for your attention !