PESAa - Platform for studying Soil–Atmosphere Exchanges on agricultural soils An agro-environmental equipment for experimentation and acquisition of agro-environmental references

Isabelle Cousin

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An agro-environmental equipment for experimentation and acquisition of agro-environmental references

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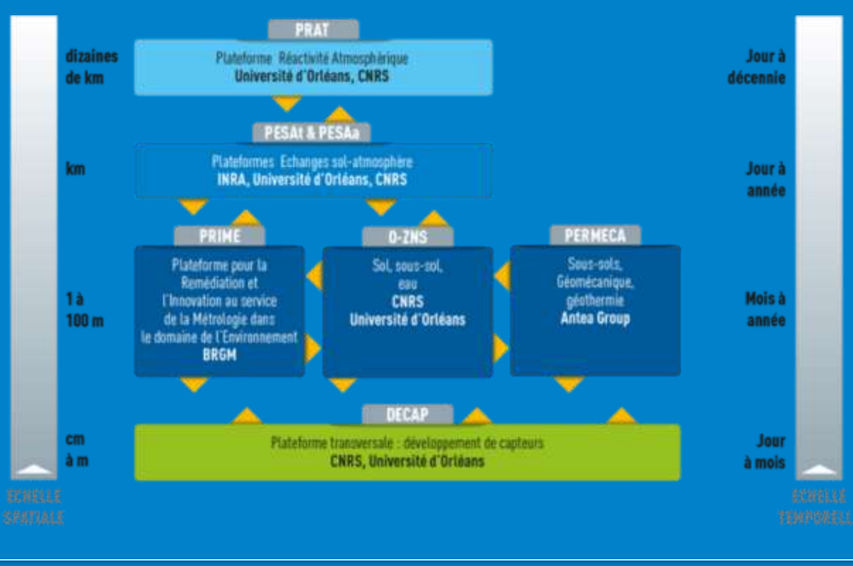

The PESA-a platform is dedicated to the characterisation of soil functions and services, especially gaseous and hydric exchanges between soils, water, and atmosphere, in agricultural contexts.

Experiments are conducted:

- in the laboratory under controlled conditions,
- at an Inra experimental plot (Nouzilly, 37),
- in an agricultural watershed (OS^2 site, 28),
- on your own sites

Rainfall simulator and laboratory measurements of soil physical properties

- Simulated rainfall of 10 to 100 mm/h over a 10 m² surface; monitoring of soil temperature, soil water content, etc..
- Water retention curves, hydraulic conductivity curves;
- Electrical resistivity;

Micro-meteorological device

- Continuous measurements of N_2O, NH_4, CO_2 emissions by agricultural fields ;
- Under development;
- Link with ICOS under study.

Automated N_2O fast-boxes

- Continuous measurements of N_2O emissions by soils at the meter scale;
- Analyses of agricultural practices and soil effect on the N_2O emissions; focus on fertilization mode and soil hydric functioning.
- Available 2019.

Precision irrigation ramp

- Valley precision irrigation system
- Length of ramp: 145 m
- Agricultural field

- Role of irrigation in the production and regulation services provided by agro-ecosystems: crop yield, water infiltration and runoff, water quality, N_2O and CO_2 emissions
- Available 2019.

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Avec le soutien de :

Cette opération est cofinancée par l'Union européenne. L'Europe s'engage en région Centre-Val de Loire avec le Fonds Européen de Développement Régional.