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

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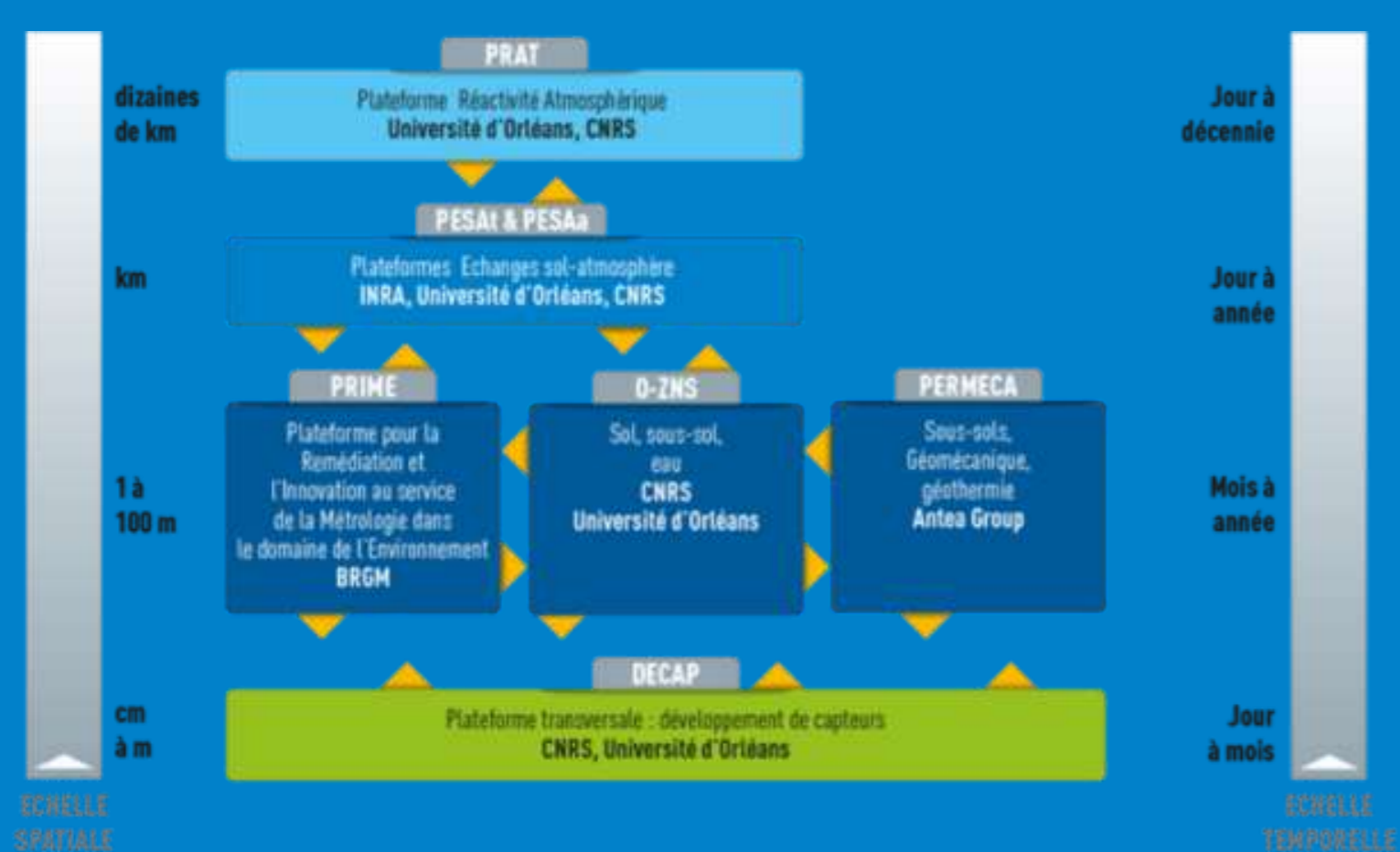
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# PESAa - Platform for studying Soil–Atmosphere Exchanges on agricultural soils

## 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<sup>2</sup> 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 m<sup>2</sup> surface; monitoring of soil temperature, soil water content, etc..
- Water retention curves, hydraulic conductivity curves;
- Electrical resistivity;



### Micro-meteorological device

- Continuous measurements of N<sub>2</sub>O, NH<sub>4</sub>, CO<sub>2</sub> emissions by agricultural fields ;
- Under development;
- Link with ICOS under study.



### Automated N<sub>2</sub>O fast-boxes

- Continuous measurements of N<sub>2</sub>O emissions by soils at the meter scale;
- Analyses of agricultural practices and soil effect on the N<sub>2</sub>O 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<sub>2</sub>O and CO<sub>2</sub> emissions
- Available 2019.

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