

# Séminaire Biologie des Plantes

Les séminaires ont lieu sur le Campus Montpellier SupAgro/INRA de La Gaillarde  
(2, place P. Viala Montpellier)

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Jeudi 10 novembre 2011

Amphi 2 (A gauche du bâtiment Administratif) à 14h00

## Christine GRANIER

(Laboratory of Plant Ecophysiology under Environmental Stresses, INRA, Montpellier-France)

### **Increasing plant phenotyping throughput with automated platforms. Does it help to answer biological questions? \***

A major goal of the life sciences is to understand and model how molecular processes control phenotypes and their alteration in response to biotic or abiotic stresses. The study of *Arabidopsis thaliana* genomics is providing new insights into the understanding of these processes. The functional analysis of genes associated with these responses is made possible by the phenotypic analyses of mutants or natural genetic variants, high-throughput genetic mapping and largescale analyses of gene expression. Ten years ago, an important bottleneck was the phenotypic analysis of the genetic variability, which requires simultaneous analysis of hundreds to thousands of plants. Automated phenotyping platforms now exist in many labs and provide large quantities of micro-meteorological data, images and phenotypical data for the study of genotype x environment interactions. In this context, databases have been developed. Standards and ontologies have been integrated when possible to share datasets with the scientific community.

Different automated platforms have been developed in our group with the aim to analyse plant growth phenotypes combining cellular, biophysical, physiological, and whole plant analyses. With such platforms, we have now access to a range of new variables at high-throughput and most of these variables could not have been timed by hand-made experiments. These powerful tools have contributed to a better understanding of how processes at different scales are co-ordinated to control leaf growth and its response to various environmental conditions. However, a good knowledge of the system under study and modeling tools were necessary to correctly analyse these data-sets so as to avoid any misleading interpretation.

\*exposé prévu en français

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Séminaires prévus :

Jeudi 17 novembre : Alexander Gallé (contact : [muller@supagro.inra.fr](mailto:muller@supagro.inra.fr))  
Jeudi 24 novembre : Sandrine Ruffel (contact : [ruffel@supagro.inra.fr](mailto:ruffel@supagro.inra.fr))