



ABSTRACT

“Phenotyping: Quantitative Analysis of Structure and Function of Plants”

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Plant phenotyping is often a bottleneck for the identification of gene function. The talk will illustrate, how modern technologies can be used to quantify plant growth, transport, photosynthesis and exchange processes at a mechanistic, high-throughput and finally on a field level. An integrated concept of plant phenotyping of dynamic plant function and structure based on defined genetic material, adequate environmental simulation and monitoring as well as novel, mostly non-invasive sensors will be presented. Integration into automated systems increases throughput and accuracy of the results. Systematic approaches for the development of phenotyping technologies and protocols as well as their integration into databases will be presented. The role of heterogeneous and dynamic environments will be highlighted as one of the crucial aspects of plant phenotyping for the identification of relevant functions. An outlook will be presented on future technologies and the integration of non-invasive and invasive analysis of plants.