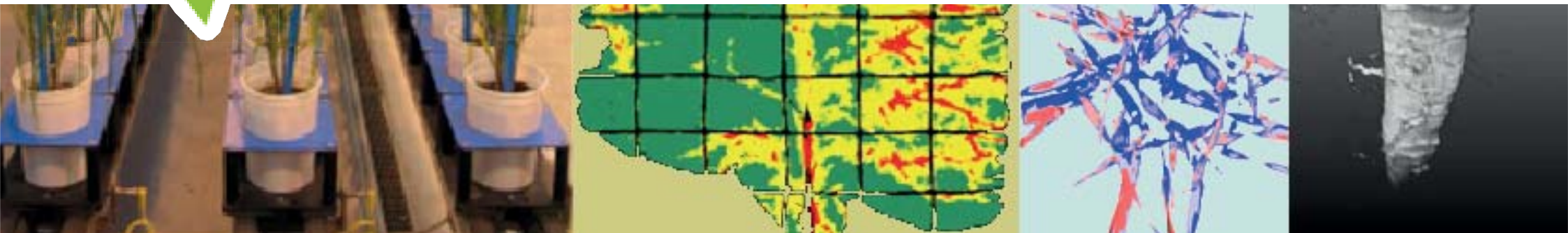


CROP.SENSE.net Summer School 20.08.-29.08.2014

Sensors, Images and Methods for Crop Stress Detection



EUROPÄISCHE UNION
Investition in unsere Zukunft
Europäischer Fonds
für regionale Entwicklung



This 10 days Summer School for PhD students and early phase postdoctoral researchers aims to provide insights into innovative sensing techniques, image analysis and data interpretation methods for **plant phenotyping** and precision agriculture. Exploring the plant phenotype and a plant's reaction to **abiotic and biotic stress** is a challenging task in greenhouse and field environments. During the Summer School challenges in **interpretation of phenotyping data** and links between data information and biological background of the measured plant or crop stand are addressed. Throughout the Summer School lecturers from **international research facilities** will demonstrate different approaches and methods for sensing and interpreting plant traits and their **relevance for practical application**.

CROP.SENSE.net is an innovative, interdisciplinary research network. Partners from different disciplines work together with **non-invasive sensor techniques** and **advanced data analysis methods** to analyse and screen plant phenotypes in different stress scenarios.

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Target Audience & Application

PhD students and early phase postdoctoral researchers with background in agricultural science, informatics or biology, working in the field of plant phenotyping or precision agriculture are encouraged to attend; basic knowledge on sensor methods and data analysis is necessary.

Application is open for 12 graduates or scientists of the CROP.SENSE.net network and 8 external graduates or scientists. Applicants are asked to briefly describe their background and motivation for attending in up to 10 lines. We will review applications in order of their income. Participants of the summer school are asked to prepare a poster of their research topic which will be discussed and presented during the Summer School. Applications with an enclosed CV are accepted via e-mail (steinruecken@igg.uni-bonn.de) until 30.06.2014.

Participation Fee

The Summer School is financially supported by the Ziel 2 -Programm NRW 2007-2013 "Regionale Wettbewerbsfähigkeit und Beschäftigung (EFRE)" by the Ministry for Innovation, Science and Research (MIWF) of the state North Rhine Westphalia (NRW) and European Union Funds for regional development (EFRE). The course fee for PhD students and postdocs is **200,- €**. It covers all lectures, courses and excursions, as well as a single room accommodation for 9 nights for external participants. Payment details will be supplied as soon as a firm offer of application is made.

Address: University of Bonn, IGG, Meckenheimer Allee 172, 53115 Bonn

Theme	Lecturer
Wednesday, 20.08.14	
Arrival	
Introduction, Key Note	Prof. L. Plümer, Dr. A-K. Mahlein Prof. Frank Ordon
Break, Check in	
Icebreaker	
Thursday, 21.08.14 Sensing	
Novel and emerging plant sensing techniques	Prof. A. Walter
Observing biol. processes by non-invasive sensors	Dr. A-K. Mahlein
Come together	
Friday, 22.08.14 Industry	
Excursion	Dr. A-K. Mahlein
Saturday, 23.08.14	
Haus der Geschichte (guided tour) or Excursion to Cologne	
Sunday, 24.08.14	
High Ropes Course	
Monday, 25.08.14 Field Sensing	
Phenotyping on different scales	Prof. U. Rascher
Precision Agriculture	Dr. R. Gebbers
Tuesday, 26.08.14 Statistic Wrap Up	
Excursion Campus Klein-Altendorf	Prof. R. Pude, Dr. T. Kraska
Statistical methods for spatiotemporal patterns	Prof. H.-P. Helfrich
Wednesday, 27.08.14 Methods for Image Interpretation	
Plant Imaging	Dr. H. Scharr
Classification	Prof. G. Menz
Thursday, 28.08.14 3D-Modelling / Group Work	
3-D Modelling	Prof. H. Kuhlmann, Dr. L. Klingbeil, St. Paulus
Group Work	
Friday, 29.08.14	
Wrap Up Summer School Presentation of Group Work Results	Prof. L. Plümer Dr. A-K. Mahlein