

1<sup>st</sup> Announcement

iCROP2016

## International Crop Modelling Symposium

### “Crop Modelling for Agriculture and Food Security under Global Change”

15-17 March 2016, Berlin, Germany

Co-Chairs: F Ewert (Bonn Univ.), K Boote (Univ. of Florida),

RP Rötter (Luke), P Thorburn (CSIRO)

Local host: ZALF, C Nendel

#### General Programme (main sessions):

1. Improvement of crop models and modelling approaches
2. Linking crop models and genetics
3. Crop modelling for risk/impact assessment
4. Expanding and supporting modelling activities



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#### Rationale and aims:

Agriculture, global change and food security are closely interrelated and are of increasing concern to society. Plant production is the most important primary process to obtain biomass for use as food and feed. Efforts to understand plant production and impacts on food and feed supply under a changing environment increasingly rely on mathematical models and data to develop and improve them. Additional demands on crop modelling are posed by integrated assessment modelling of agricultural systems. While progress has been made in crop and grassland modelling particularly in recent years in larger international programs such as AgMIP, MACSUR and CCAFS, a number of challenges still remain. Therefore, the aims of the symposium are:

- Review the recent advances in modelling crops and grasslands to support improved agricultural production and food security under global change
- Identify key challenges and the future role of crop modelling

#### Scope:

The symposium focuses on recent scientific work related to model improvement, generation and use of experimental data and on advancements in model application considering new methods of model intercomparison, uncertainty propagation and scaling. While the main emphasis is on crops, progress on grassland and vegetation modelling will also be considered as well as new approaches of model implementation making use of recent software developments. Improvements in crop and cropping system modelling will refer to the field level but also to the higher landscape and regional level and will include efforts to link crop modelling to genetics. Studies to improve the modelling of relationships between plant production, resource use and management including effects on water and nutrient cycles are welcome. Impact studies can refer to the wider context of global change but must emphasize methodological advances in assessments. Integrated modelling studies linking crop and other models, e.g. economic models, may be considered but need to be presented from a crop modelling perspective

**Main Sessions:**

The four main sessions cover model improvements and advances, their applications and related other modelling activities. Key topics are indicated for each session

**1. Improvement of crop models and modelling approaches**

- Heat and other abiotic stresses
- Nutrient uptake
- Energy balance
- CO<sub>2</sub> effects on growth processes including interactions

**2. Linking crop models and genetics**

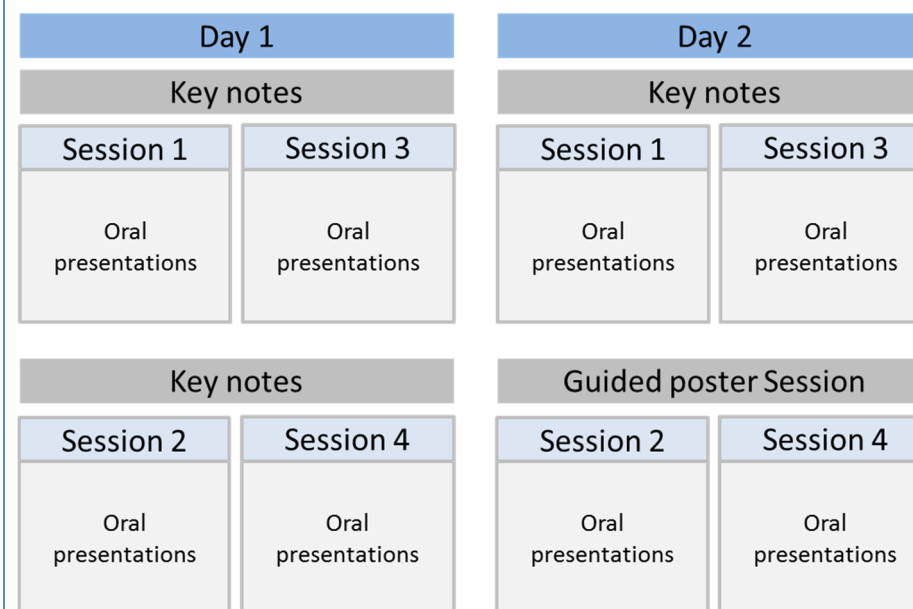
- Advances in G x E x M modelling
- Approaches to link crop growth and development to the underlying genetics

**3. Crop modelling for risk/impact assessment related to global change and food security**

- Advances in methods for risk and impact assessment
- New methods for e.g. model intercomparison, uncertainty propagation, upscaling

**4. Expanding and supporting crop modelling activities**

- Grassland and other vegetation modelling
- Pest and disease modeling; modeling of competition with weeds
- Functional Structural Plant Modelling
- New modules, e.g. ozone effects, nutritional quality

**General Symposium structure:****Scientific Committee members:**

Senthold Asseng (UF, US)  
 Andy Challinor (ULeeds, GB)  
 Melanie Correll (UF, US)  
 Delphine Deryng (UEA, GB)  
 Katrien Descheemaeker (WUR, NL)  
 Michael Dingkuhn (IRRI, PH)  
 Marcello Donatelli (CRA, IT)  
 Graeme Hammer (UQ, AU)  
 Mario Herrero (CSIRO, AU)

Cesar Izaurralde (UMD, US),  
 Pierre Martre (INRA, FR)  
 Claas Nendel (ZALF, DE)  
 Jørgen Olesen (AU, DK)  
 Matthew Reynolds (CIMMYT, MX)  
 Claudio Stöckle (WSU, US)  
 Francois Tardieu (INRA, FR)  
 Phillip Thornton (CCAFS, KE)  
 Yan Zhu (NJAU, CN)