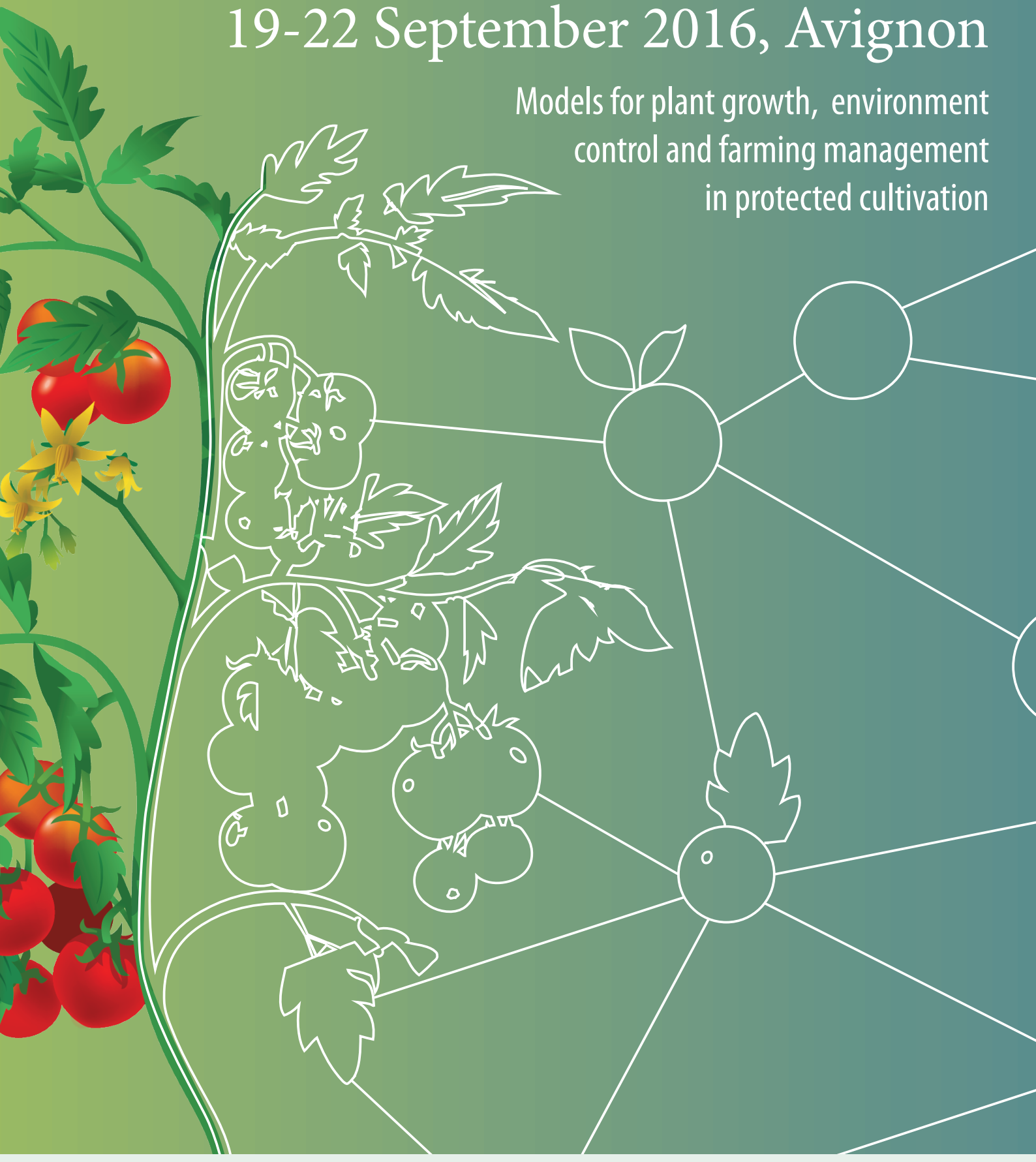
HORTIMODEL2016

19-22 September 2016, Avignon

Models for plant growth, environment control and farming management in protected cultivation



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Aims and scopes of the Symposium

In the context of global change, horticultural systems encounter growing challenges, among which plant adaptation to increasing abiotic and biotic constraints as well as the reduction of water, nutrients and chemical inputs. Plant breeding, innovative cultural practices and climate control are all effective levers that can be combined to improve crop yield and quality in low input production systems. In parallel, a renewed modeling effort is needed for providing an integrated understanding of horticultural system functioning. Thus, model goals for the future are to describe the cross-talk among physiological processes at multiple plant scales, simulate complex greenhouses designs, anticipating the consequences of environmental fluctuations or pest attack for system control and management.

Hortimodel2016 will bring together modelers from different fields promoting exchanges between fundamental and applied plant research, around the following four topics.

Topic 1: Decision-support modeling tools
keynote speaker: Dr. Juan I. Montero, IRTA, Spain

This topic will encompass all modelling developments regarding the understanding, monitoring and management of:

- Crop and climate
- Water, nutrient and energy
- Plant status and stress response

Topic 2: Modeling plant and organ responses to biotic and abiotic constraints
keynote speaker: Prof. Dr. Ir. Leo F.M. Marcelis, Wageningen University, Netherland

In this topic, models predicting the effects of biotic and abiotic constraints on crop growth and physiology will be presented, considering all scales from gene to plant, including greenhouse-cultivated plants but also model plants or plants cultivated in the open field:

- Plant/organ growth and development
- Plant defense
- Product quality

Topic 3: Methodological issues for plant systems modeling
keynote speaker: Prof. Paul-Henry Cournède, CentraleSupélec, France

This topic will address important issues concerning methodological advancements for:

- Data acquisition and model calibration
- Model selection and evaluation
- Model reduction and simplification strategies
- Model combination and scale integration

Topic 4: Multi-scale, integrative approaches
keynote speaker: Dr. Karine Chenu, Centre for Plant Science, QAAFI, Australia

This topic will focus on innovative approaches that integrate the genetic and physiological controls into mechanistic process-based models, or that link plant/organ structure and functions:

- System/integrative biology: from genes to organs
- Functional-structural models
- QTL-gene-trait modeling. Model-assisted selection

The proceedings of this symposium will be published in the ACTA HORTICULTURAE series of the ISHS.
Contact: hortimodel2016@paca.inra.fr
Web: https://colloque.inra.fr/hortimodel2016

Local Organizing Committee
Nadia Bertin, Valentina Baldazzi, Laurent Gomez, François Lecompte, Gilles Vercambre, INRA

Conveners
Nadia Bertin, Valentina Baldazzi, INRA