



# XIV<sup>th</sup> STICS SEMINAR

FINAL PROGRAM

**INRAE**



**LIÈGE université**  
**Gembloux**  
**Agro-Bio Tech**

March 17-19, 2026

Organized by the University of Liege, Belgium



## Welcome

On behalf of the Organizing Committee, it is my great pleasure to welcome you to the 14<sup>th</sup> STICS seminar 2026. I am delighted to gather this audience for three days of scientific exchanges and discussions. Agriculture is facing unprecedented challenges ! While it must keep ensuring food security for all, it has to face the threat of climate change, lower the pressure it puts on the environment, stop biodiversity erosion and contribute to its restoration. In this context, I'm convinced that crop modelling can play a key role in advancing our knowledge of agro-ecosystem functioning and in designing innovative cropping systems, able to support the unquestionable required agroecological transition towards a sustainable and resilient future.

The aim of the seminar is to bring together the designers, the developers and the users of the STICS crop model - and associated tools - to present the latest technical and scientific advances around the model, illustrated by relevant case studies. The seminar should also provide us with the opportunity to share ideas and insights, and further discuss strategies for deploying and developing the model to meet the nowadays' and tomorrow's challenges.

The scientific program is structured around five themes that are important to me :

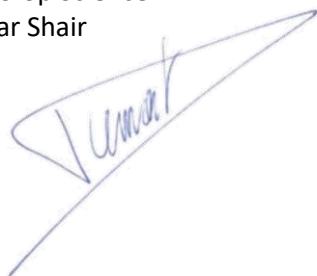
- Agroecology: Assessing ecosystem services and supporting the agroecological transition using the model
- From seed to harvested organ, from variety choice to crop sequence design, from a practice to its effect on biogeochemical cycles: the model as a tool to understand systems
- Climate change: Using the model as a tool to explore adaptation and/or mitigation strategies
- New formalisms, parameterization of new species and development of tools around the STICS model
- STICS & friends: interfacing the model with databases and coupling it with other models

I hope the best for this event to be a stimulating conferences. I wish you a productive, inspiring, and enjoyable seminar, and I look forward meeting and discussing with you during this meeting.

Welcome to Belgium, welcome to ULiege-GxABT,

Prof. Benjamin Dumont

University of Liege – Gembloux Agro-Bio Tech  
Plant Sciences – Crop Science  
14<sup>th</sup> STICS Seminar Chair



## Organizing committee

Benjamin Dumont	University of Liege – Gembloux Agro-Bio Tech, Belgium
Rachel Akindavyi	University of Liege – Gembloux Agro-Bio Tech, Belgium
Annick Lejeune	University of Liege – Gembloux Agro-Bio Tech, Belgium
Alain Mollier	INRAE, Bordeaux Sciences Agro – UMR ISPA, France
Joël Léonard	INRAE – UMRt BioEcoAgro, France
Samuel Buis	INRAE, University Avignon – UMR EMMAH, France

## Scientific committee and Reviewers

Benjamin Dumont	University of Liege – Gembloux Agro-Bio Tech, Belgium
Samuel Buis	INRAE, University Avignon – UMR EMMAH, France
Marie Launay	INRAE – UMR AGROCLIM, France
Inaki Garcia-De-Cortazar-Atauri	INRAE – UMR AGROCLIM, France
Rémi Vezy	CIRAD, University Montpellier, CNRS – UMR AMAP, France
Tiphaine Vidal	INRAE – UMR BIOGER, France
Fabien Ferchaud	INRAE – UMR ECO&SOLS, France
Guillaume Jego	Agriculture and Agri-Food Canada – Quebec R&D Centre, Canada
Julie Constantin	INRAE, Université de Toulouse – UMR AGIR, France
Anne Isabelle Graux	INRAE, Agrocampus Ouest – UMR PEGASE, France
Loïc Strullu	INRAE – UMRt BioEcoAgro, France
Hugues Clivot	INRAE, University Reims Champagne Ardenne – UMR FARE, France
Fabien Ferchaud	INRAE, University Montpellier, CIRAD – UMR Eco&Sols, France
Alain Mollier	INRAE, Bordeaux Sciences Agro – UMR ISPA, France
Joël Léonard	INRAE – UMRt BioEcoAgro, France
Christine Le Bas	INRAE – Info&Sols, France
Eric Justes	CIRAD – UMR System, France

## Keynote speakers

Philippe Baret	UCLouvain – Earth and Life Institute, Belgium
Xavier Draye	UCLouvain – Earth and Life Institute, Belgium
Guillaume Lobet	UCLouvain – Earth and Life Institute, Belgium

## University of Liege – Gembloux Agro-Bio Tech

Passage des Déportés, 2, 5030 Gembloux, Belgique



## They have supported us

On behalf of the Organizing Committee, we wish to express our sincere thanks to the partners who have supported us in the seminar's organization



PROGRAMME  
DE RECHERCHE

CARBONE ET  
ÉCOSYSTÈMES  
CONTINENTAUX

## Program – General overview

	17 March 2026	18 March 2026	19 March 2026
08:30	Welcome and coffee	Welcome and coffee	Welcome and coffee
08:45			
09:00	Introduction by authorities (0h45) Ulïege-GxABT - BioEcoAgro - INRAE - FairCarbon	Keynote speakers (1h15) Prof. Xavier Draye & Prof. Guillaume Lobet	Session 5 Climate Change 5 talks 20min + Wrap-up 20min
09:15			
09:30	Opening by EP-STICS (1h00)	Coffee break - 30'	Coffee break - 30'
09:45			
10:00	Keynote speaker (1h15) Prof. Philippe baret	Session 3 STICS & Friends 5 talks 20min + Wrap-up 20min	General assembly and Conclusion
10:15			
10:30	Lunch break	Lunch break	Closure of Seminar
10:45			
11:00	Lunch break	Lunch break	Lunch break or lunch pack
11:15			
11:30	Session 1 Agroecology 5 talks 20min	Session 4 New Formalisms 5 talks 20min + Wrap-up 20min	
11:45			
12:00	Flash talk Poster : 6 posters	Flash talk Poster : 6 posters	
12:15			
12:30	Coffee break - 30'	Coffee break - 30'	
12:45			
13:00	Session 2 System Approach 3 talks 20min + Wrap-up 20min	Poster session	
13:15			
13:30	Free time	Free time	
13:45			
14:00	Dinner and more	Dinner and more	
14:15			
14:30			
14:45			
15:00			
15:15			
15:30			
15:45			
16:00			
16:15			
16:30			
16:45			
17:00			
17:15			
17:30			
17:45			
18:00			
18:15			
18:30			
18:45			
19:00			
19:15			
19:30			
...			

## Program – Tuesday 17 March 2026

17 March 2026	
08:30	<i>Welcome and coffee</i>
08:45	<p><b>Introduction by Authorities</b></p> <p><i>ULiege-GxABT</i> : Dean Prof. Fauconnier M.L. - Vice-Dean Research Prof. Bindelle J.  <i>INRAE-AgroEcoSystem</i> : Head of Dpt. Prof. Nesme T.  <i>UMRt BioEcoAgro</i> : Prof. Jacques P. - <i>FairCarboN</i> : Prof. Clivot H.</p>
09:45	<p><b>Introduction by EP-STICS [Chairs : Buis S. &amp; Dumont B.]</b></p> <p><i>Opening by "Le Bureau" EP-STICS</i></p>
10:45	<i>Coffee break</i>
11:15	<p><b>Keynote speaker I [Chairs : Dumont B.]</b></p> <p><i>Prof. Philippe Baret</i>            Agroecology : from plant to systems</p>
12:30	<i>Lunch break</i>
14:00	<p><b>Session 1 : Agroecology [Chairs : Clivot H. &amp; Ferchaud F.]</b></p> <p><i>De Freitas et al.</i> - Modelling cereal–cowpea intercropping to close the yield gap while reducing N demand under climate variability and climate change in West Africa  <i>Damien et al.</i> - Building on a process-based modelling framework to assess CO<sub>2</sub> exchanges in a grazed grassland–maize rotation  <i>Strullu et al.</i> - Assessing Low-Input Crop Rotations to Reduce Nitrate Leaching in Water Catchment Area with the STICS model  <i>Desmarez et al.</i> - Territorial food self-sufficiency under climate change through optimised crop rotations and STICS simulations  <i>Delandmeter et al.</i> - Large-scale Multi-criteria Evaluation of Agroecological Strategies with the STICS Model</p>
15:45	<p><b>Flash talk Poster [Chair : Le Bas C. &amp; Combes D.]</b></p> <p>1. <i>Favaro et al.</i> - 2. <i>Gawinowski et al.</i> - 3. <i>Philippart et al.</i> - 4. <i>Jego et al.</i> - 5. <i>Dejonckheere et al.</i> - 6. <i>Mesbah et al.</i></p>
16:15	<i>Coffee break</i>
16:45	<p><b>Session 2 : System Approach [Chairs : Clivot H. &amp; Ferchaud F.]</b></p> <p><i>Speeckaert et al.</i> - Simulation of the nitrogen effect of legumes as a tool to unravel their non-nitrogen benefits  <i>Lenoir et al.</i> - Upscaling STICS to management zones: a way to enhance N use efficiency?  <i>Nyaga et al.</i> - Use of the STICS model to evaluate nitrogen leaching in perennial forage and annual crop based rotations  <i>General discussion</i></p>
18:00	<i>Free time</i>
19:00	<i>Dinner and more</i>

## Program – Wednesday 18 March 2026

18 March 2026	
08:30	<i>Welcome and coffee</i>
08:45	<p><b>Keynote speakers II [Chairs : Garcia de Cortazar Atauri I. ]</b></p> <p><b>Prof. Xavier Draye &amp; Prof. Guillaume Lobet</b></p> <p>Plant roots in crop models: why are they important and how should they be managed?</p>
10:00	<i>Coffee break</i>
10:30	<p><b>Session 3 : STICS &amp; Friends [Chairs : Vidal T. &amp; Graux A.I.]</b></p> <p><b>Braud et al.</b> - ArchiCrop, adding the 3D dimension to STICS</p> <p><b>Colbach et al.</b> - The contribution of STICS to modelling the impacts of weeds and climate change on crop production and biodiversity in FLORSYS</p> <p><b>Deheinzelin et al.</b> - Disease regulation in intercropping systems depends on spatial arrangement – a modelling study</p> <p><b>Houballah et al.</b> - Development of ORCHIDEE-CROP v1.0: a nitrogen-explicit agro-land surface model and its evaluation across European wheat sites</p> <p><b>Lesquoy et al.</b> - Coupling MAELIA and STICS: Toward New Opportunities for Agricultural Modelling Approaches</p> <p><b>General discussion</b></p>
12:30	<i>Lunch break</i>
14:00	<p><b>Session 4 : New Formalisms &amp; Tools [Chairs : Strullu L. &amp; Mollier A.]</b></p> <p><b>Pardon et al.</b> - Evaluating the STICS model for simulating grapevine development and new formalisms across contrasting soil types at a local scale in Saint-Émilion</p> <p><b>Clivot et al.</b> - Evaluation of STICS performance for predicting C and N mineralization kinetics and N<sub>2</sub>O emissions from contrasted litter types on urban lawn soils</p> <p><b>Buis et al.</b> - AgMIP Calibration Protocol: results, implementation and new directions</p> <p><b>Gawinowski et al.</b> - Evaluating calibration strategies for a new winter wheat cultivar in the STICS crop model</p> <p><b>Kebalo et al.</b> - Tropicalization of the STICS model: insights from sugarcane calibration and nitrogen dynamics in tropical volcanic soils</p> <p><b>General discussion</b></p>
15:45	<p><b>Flash talk Poster [Chair : Le Bas C. &amp; Combes D.]</b></p> <p>1. Strullu - 2. Bruhwyler et al. - 3. Flutre et al. - 4. Clivot et al. - 5. Gaudnik et al. - 6. Ruillé et al.</p>
16:15	<i>Coffee break</i>
16:45	<i>Poster session</i>
18:00	<i>Free time</i>
19:00	<i>Dinner and more</i>

## Program – Thursday 19 March 2026

19 March 2026	
08:30	<i>Welcome and coffee</i>
08:45	<p><b><u>Session 5 : Climate Change</u></b> [Chairs : Jégo G. &amp; Léonard J.]</p> <p><i>Giraud et al.</i> - Global Sensitivity Analysis of STICS Soil Input on CO2 Net Ecosystem Exchange in Burgundy Vineyards</p> <p><i>Lacroix et al.</i> - Impact of climate changes on the main belgium cash crop</p> <p><i>Naminina et al.</i> - CLIMODIF: Simulating Crop Rotations with STICS under Climate Change in the Barrois area in France</p> <p><i>Gawinowski et al.</i> - Assessing crop model adequacy for future climates</p> <p><i>General discussion</i></p>
10:45	<i>Coffee break</i>
11:15	<p><b><u>General assembly and Conclusion</u></b> [Chairs : Buis S. &amp; Launay M.]</p> <p>Wrap-up of sessions by chairmen and chairwomen</p> <p>Open-discussion with assembly</p>
12:30	<i>Closure of seminar by "Le Bureau" EP-STICS</i>
13:00	<i>Lunch break or lunch pack</i>